

The United States

Miller

AND THE MILLING ENGINEER.

Fourteenth Year.—No. 8.

MILWAUKEE, AUGUST, 1889.

Subscription Price, \$1.00 Per Year.

THE SMITH PNEUMATIC SYSTEM OF TRANSFERRING AND STORING GRAIN.

THE above named system is said to reduce the expense of handling and storing grain to a minimum. Mr. Lyman Smith is the inventor of the machinery required and the SMITH PNEUMATIC TRANSFER & STORAGE Co. of 118 Adams st., Chicago, Ill., has been formed for putting the system into use. In regard to it the company says: "All questions relating to the handling and preserving of grain having been solved, this system is offered to the people on its own merits.

The grain is raised by this pneumatic process through a tube or pipe to any required height, and discharged into a receiver from which the air is being continuously exhausted, under pressure of from one to two pounds. The receiver rests on scales, and when filled the grain is weighed, and may be discharged through pipe whenever desired by simply reversing the engines. The apparatus for handling can be modified as to capacity and form of construction. A 3,000-bushel receiver with 20-inch pipe, and a 20-bushel receiver with 3-inch pipe, the former with capacity of 1,000, the latter

grain is damp from any cause air can be drawn through and the entire moisture is removed and by substituting carbonic acid gas, it can be sweetened and restored."

The operation of this system is described as follows:

When grain is to be removed from vessel, boat, car, tank, bin, wagon, or any form of receptacle containing it, the receiving pipe is swung in the required position and the mouth-piece placed on the mass of grain to be moved; the engine driving the blower is started in a direction that will exhaust the air from the receiver; as the energy of the exhaust increases; the air surrounding the mass of grain, and that contained in

and thus a constant stream of grain is made to enter the pipe, the mouth-piece loading the current of air and maintaining a uniformity of supply. The ascending column on leaving the chamber of the mouth-piece assumes the rotating motion, and the grain is carried up in the direction of a winding incline plane, similar to that observed in a "whirlwind." When the grain enters the receiver the expended state of the air contained in it will no longer support the grain and it drops by its own gravity to the bottom of the receiver. When the receiver is filled and contents weighed, the valve in receiving pipe is closed, the blowers are reversed, and the air driven into the receiver, compressing it to a slight degree. A portion of the air passes through

the auxiliary pipe direct to the outlet from receiver and enters the discharge pipe at that point, the motion of the air through this pipe and the force of the compressed air in and above the grain in the receiver drive the grain through the discharge pipe in any direction required.

BALTIMORE dealers are clamoring for some one to build a big elevator for oats.

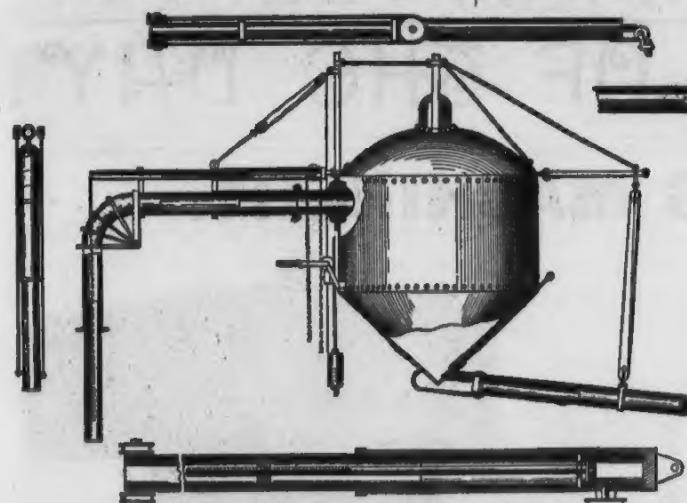


FIG. 2. SHOWING RECEIVING AND DISCHARGE PIPE, ETC.

of 20 bushels per minute, would be the extremes. Less power is required to raise any form of matter by this than by any known process, simply because the friction which in other machines must be charged to account of power, is utilized as the direct and positive agent that lifts the grain, for the grain is loaded on the in-rushing current of air and propelled onward by the friction generated by contact of the grain with the particles of air. The contact of the grain with this cool current of air while being elevated and discharged will benefit it more than the whole cost of handling. While this apparatus is suited for the steel tank storage system, it is readily adapted for use in transferring grain from cars or vessels to warehouses or granaries of any description. No doubt has ever existed as to the possibility of keeping grain and other products for an indefinite period in suitable air tight receptacles, and since the pneumatic system of transferring grain solves the problem of utilizing the air tight storage, all the grain in the country can be stored and kept in a perfect condition. If the

intricacies between the grains is drawn to the mouth of the pipe in obedience to a natural law or tendency to restore equilibrium in the receiver, which has been disturbed by exhausting a portion of the air from it. When the minus pressure in the receiver indicates from one to two pounds per inch the energy with which the air rushes to and into the pipe is sufficient to carry with it the particles of grain in close proximity to it, and as these are taken up others more remote take their places,

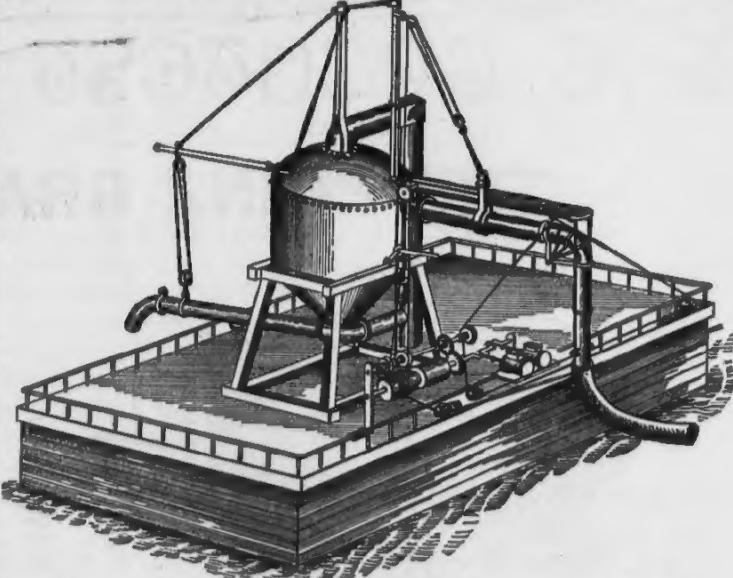


FIG. 3. SHOWING MANNER OF OPERATING ON COMMON BARGE.

of the total amount of cloth required for the covering of the cotton crop, while the orders for jute bagging have been earlier and larger than in previous years.

The latest resolution of the Farmers' Alliance, accepted by farmers from thirteen Southern States, was to use the very heaviest jute bagging and ties obtainable in the market. This is exactly what has always been done, and the Northern cotton mills have paid and will pay the bills as usual.—Boston Commercial Bulletin.



FIG. 4. PLAN FOR A STEEL STORAGE STATION.

AN English inventor, desiring better lubrication of indicator pistons has an internal reservoir formed in the body of the piston, so that the steam pressure acting on the surface of the lubricant forces it through small outlets into a groove cut on the outer surface of the piston. The piston is thus continuously lubricated and the oil under pressure in the groove forms a packing. One piston full of oil will last while taking twenty-four diagrams.

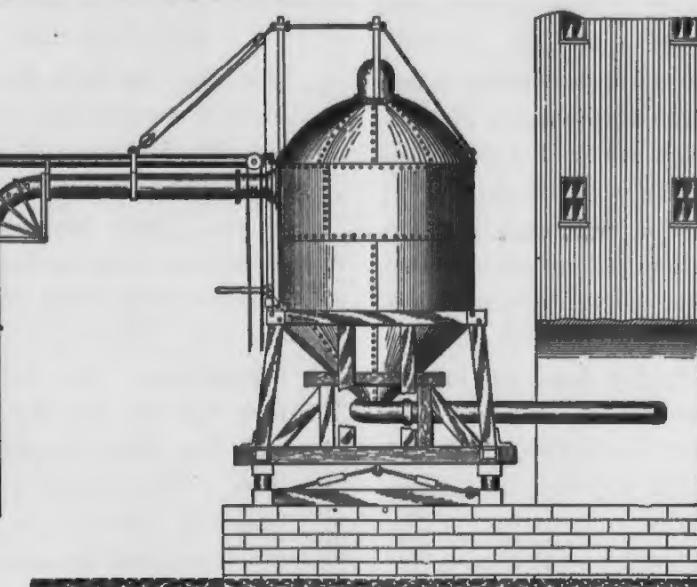


FIG. 1. RECEIVER ON SCALE WITH PIPE CONNECTIONS.

FIGHTING THE BAGGING COMBINE.

The ridiculous attempt having failed by which the Southern planter sought to force Northern mills to pay him a bonus on cotton bagging, the Southern press is now full of suggestions for revenge. No adequate substitute has been found for jute bagging, that is, no substitute that the planters will use. As no allowance is made for tare, the farmer naturally uses the heaviest and cheapest covering he can get, that is jute bagging.

The great pine straw bagging interest which the Southern press and even one Boston journal puffed so industriously has died without a groan, not one solitary yard having been sold. The cotton bagging is also too expensive to allure the planters from jute bagging in spite of the numerous resolutions that have been passed, never, never to use a yard of the wicked fabric. The cotton bagging, a capital covering, but light in weight and high in price, is made chiefly at one mill in New Orleans. This mill a short time ago advertised that it would run on receipt of orders for 1,000,000 yards. Its new machinery has arrived from Lowell, but has not yet commenced running. In other words, the orders given for cotton bagging have not reached one-forty-fifth



LATEST NEWS FROM EAST AND WEST



— OFFICE OF —
STATEN ISLAND FLOURING MILLS.
(Capacity 1500 Bbls.)

MARINER'S HARBOR, N. Y., July 11th, 1889.

Messrs. EDW. P. ALLIS & CO., Milwaukee, Wis.

DEAR SIRS:—After we had decided to build a mill, we carefully studied the different systems as shown in some of the best mills in the country. As a result, we deemed it to our interest to adopt yours. Stating our requirements and receiving your guarantees, we paid your price without question, and placed ourselves absolutely in your hands, giving you *carte blanche* to build us the best mill you could. Visitors tell us we have the cleanest mill they ever saw. Insurance men tell us we have the cleanest mill and the best fire risk they ever inspected in the same line. This is the best possible testimony that the machinery and workmanship are up to the highest standard. All the machinery you have put in our mill is first-class. The *Gray Rolls* and *Reliance Purifiers* are models of perfection. These, in combination with your system of separations, give us a mill that for simplicity of construction and results obtained, we believe stands second to no other.

Yours Truly,

B. B. STEWART, *For Staten Island*
W. A. AGARD, *Flouring Mills.*

— OFFICE OF —
HUMPHREY & BIRD.

HASTINGS, NEB., July 23d, 1889.

Messrs. EDW. P. ALLIS & CO., Milwaukee, Wis.

DEAR SIRS:—We have now been running the new 150 barrel mill you have just built for us long enough to see what it can do, and our expectations are more than realized. We cheerfully accept the mill as a complete fulfilment of your contract in every way, and take this opportunity to say that if we were to build another mill we would want it built by you. Before placing our order, we had an opportunity to inspect some of the best mills in the country, representing all the leading systems, and are now satisfied that there is no finer 150 barrel mill in the country than our own. The results are up to the highest standard and the equipment is perfection. Your roller mills are too well known to need recommendation, and we can say for your *Reliance Purifiers*, *Gray Centrifugal Reels* and *Gray Flour Dressers* that we have never seen anything that excels them. There may be a better system of milling than yours, but we do not believe it. We shall be pleased to have your customers inspect our mill, which will tell its own story.

Yours Truly,

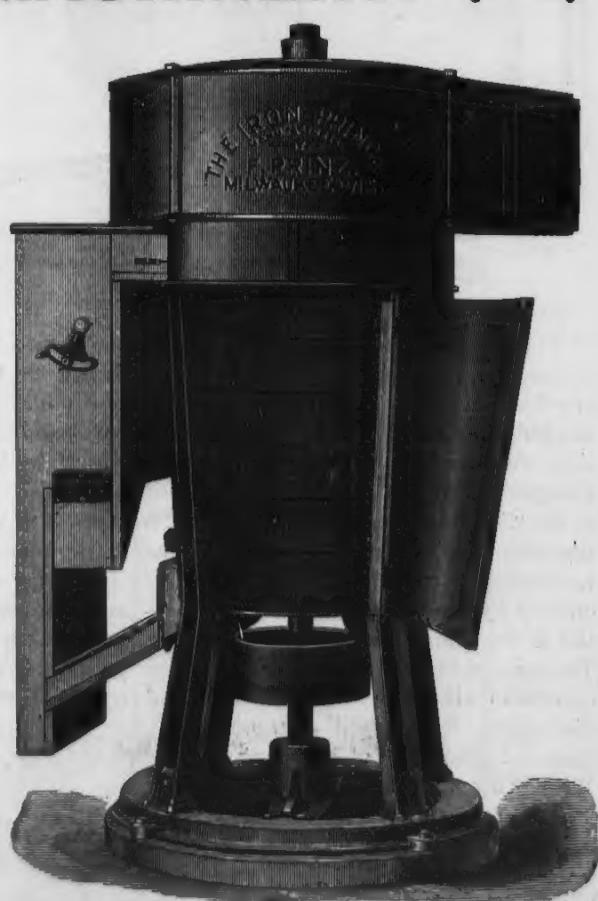
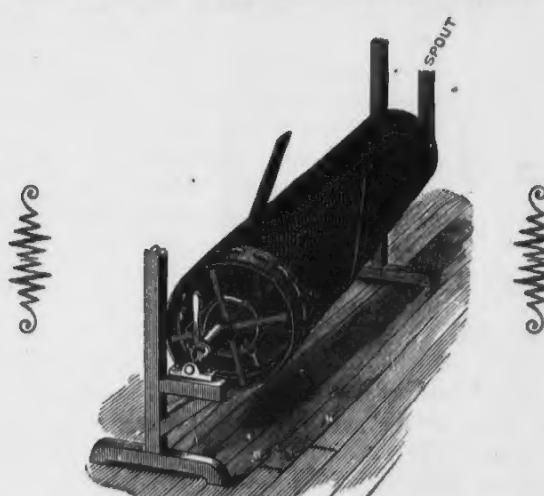
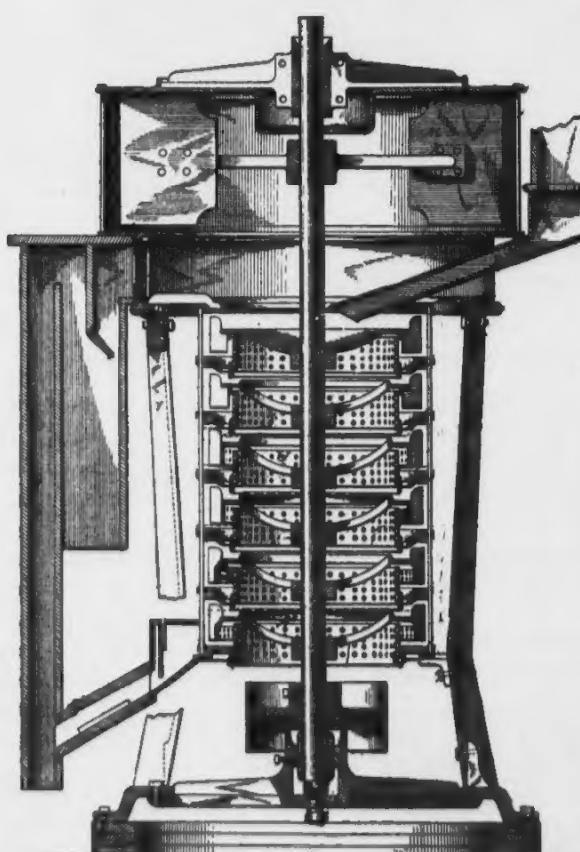
HUMPHREY & BIRD.

EDW. P. ALLIS & CO.
Mill Builders and Mill Furnishers,

RELIANCE WORKS. - - - MILWAUKEE, WIS.

THE GREATEST SUCCESS OF THE DAY!

• • • THE PRINZ GRAIN CLEANING MACHINERY. • • •



KIEL, Wis., January 21, 1889.
The Prinz & Rau Mfg. Co., Milwaukee, Wis.:

GENTLEMEN—The No. 2 Iron Prince Smutter which I bought of Mr. Prinz over two years ago has been very satisfactory to me, as it does the best work of any smutter that I ever saw work. It has caused me no trouble whatever, and if any person would like to see it run or know anything more about it, you may refer him to me.

Yours truly, HENRY STOLL

NEW TROY MILLS,
NEW TROY, MICH., May 20, 1889.

The Prinz & Rau Mfg. Co., Milwaukee, Wis.:

GENTLEMEN—We have had your cockle machine running for some time, and it certainly is a grand success, and here is your money for same. I am perfectly satisfied with it, and can highly recommend it to any one.

Yours respectfully, F. H. MORLEY

The Iron Prince and the Prinz Imp'd Cockle Machine

MANUFACTURED BY

THE PRINZ & RAU MFG. CO.,

MILWAUKEE, WIS.

Write for Catalogue and Discount.

UNITED STATES MILLER
AND THE MILLING ENGINEER.

E. HARRISON CAWKER, EDITOR.

M. W. THORMAHLEN, Associate Editor.

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MILWAUKEE, AUGUST, 1889.

We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER AND THE MILLING ENGINEER. You will thereby oblige not only this paper, but the advertisers.

WE send out a number of SAMPLE COPIES of this issue containing subscription blanks. We solicit a critical examination of our Journal and invite you to subscribe. The price is one dollar per year. No premiums—no discount. Our September number will contain matters of special interest to millers which you will not find elsewhere.

THE salt trust has postponed its organization—perhaps indefinitely.

THE Southeastern Indiana Millers' Association met August 12, at Cambridge City, Ind.

THE Pennsylvania Millers' Association will hold their annual meeting at Chambersburg, Sept. 17. A large attendance is expected.

THE Indiana millers are organizing a mutual fire insurance company. S. B. Boyer, of Logan, Ind., can give interested parties full particulars.

MR. J. W. Sykes, a Chicago seeds man, has been sentenced to the penitentiary for two years for issuing bogus warehouse receipts. Evidently Chicago has some sound juries and judges.

THE North Dakota Millers' Association will hold their next meeting at Fargo, August 24.

J. S. Hilger, of Bismarck, is president, and J. M. Turner, of Mandan, secretary.

WE call the attention of steam users to an article in another column, entitled "A Letter to Engineers." It is from a correspondent of *The Engineer* (London), and we take pleasure in publishing it in our columns.

THE American Newspaper Directory, just issued by Geo. P. Rowell & Co., of New York, shows that there are 17,107 regular publications in the United States and Canada. The combined circulation is 34,799,500 copies per year.

THE Stationary Engineer, of Chicago, Ill., has become a thoroughly first-class technical journal of steam engineering, and is deserving of the large patronage it now enjoys. The practical engineer can get lots of good "pointers" from any number he happens to read.

WE call the attention of interested parties to the advertisement in this issue of the H. C. McCool Mfg. Co., of Perrysville, O. Parties contemplating the purchase of a Corn and Cob Crusher will be benefitted by consulting this firm who will cheerfully give all desired information on the subject.

ESSAYS and treatises of great length have been written and printed on the subject of drinking water. There is only one way to secure harmless drinking water, and that is to take the best water convenient and boil it. It is then harm-

less. The tea-kettle is more valuable than the microscope in solving the question of safe drinking water.

THE files of milling journals published during several years past are supposed to contain a good many "meaty" items of business interest to the "Big 4." Heretofore many manufacturers of roller mills were fond of sending in their lists of roller mills sold to Smith, Brown or Jones, as the case might be, for publication. These items are good pointers now for the company seeking payments of royalties.

THE Merchant, Miller and Manufacturer, of St. Louis, in its August number says:

"The consolidation of the grain elevator and warehouse interests of St. Louis and East St. Louis have adopted reforms as well as reduction of storage rates. It is evident from the figures made that the vast interests of the milling industry of St. Louis and vicinity is recognized, and inducements offered in the long rates made, that instead of as heretofore antagonizing the miller, will enable the carrying of stocks that will obviate many difficulties heretofore encountered under the old system.

MR. C. B. COLE, of Chester, Ill., has been appointed member of Executive Committee of the Miller's National Association in place of H. L. Halliday, resigned. M. S. Blish, of Seymour, Ind., vice Nicholas Elles, deceased.

A. C. Loring, of Minneapolis, vice F. L. Greenleaf elected president of the Association. Geo. H. Plant, of St. Louis, vice. Alex. H. Smith resigned.

The former representatives who still continue in office are P. H. Macgill, of Baltimore; F. W. Stock, of Hillsdale, Mich.; A. R. James, of Buffalo, N. Y.; Homer Baldwin, Youngstown, O.; S. H. Seamans, of Milwaukee, Wis.

A Parisian lady whose furniture and effects, including jewelry, were insured against loss or damage by fire, accidentally knocked a \$3,000 pearl necklace from the mantle into the fire below in the grate, of course destroying it. The insurance company declined to pay, as they claimed that the loss was not by such a fire as generally was contemplated when the risks were taken. The Court held, however, that "the word *fire* in matters of assurance applied to every accident, however unimportant such accident may be, so long as it is caused by the action of fire." The insurance company was ordered to pay the ascertained value of the necklace to the lady.

CAPT. McDougall's PATENT STEEL BARGE.

IT is believed by many practical men that the steel, cigar shaped barge invented by Capt. McDougall and built by the American Steel Barge Co., of Duluth, will be the means of greatly reducing freight rates from the Northwest to the East. The second of these boats named the "102" was launched at Duluth, July 17, in the presence of a great concourse of enthusiastic spectators.

The capacity of the "102" is about 3,000 tons dead weight on a 15-foot draft, and she will take 100,000 bushels of grain at a load. The new vessel is 253 feet keel; length, 260 feet over all; 36.1 feet beam, and 18.66 feet molded depth. Her total depth is 22 feet, and her net registered tonnage rating is 1,138.56 tons.

The company will go right on and build a number of these barges.

THE SPY MILLER.

In case of war and police service it is contended that the service of the spy is not only an honorable, but a deserving calling. It may be so, but we have always had our doubts about it. We have known of some cases and heard of

many more, where second and third millers of an envious, deceitful and avaricious character have made it a part of their business to watch their head miller closely, and to take particular pains to report on the sly to their employer any errors or shortcomings of the head miller, often presenting things harmless in themselves in such a light that unjust suspicions of his employee would be raised in the mind of his employer. Frequently this underhand espionage is done for the purpose of getting the head miller "bounced," so that the spy informer can secure his position. Our invariable advice in such cases would be, if any bouncing was to be done, to bounce the spy first.

THE WORLD'S FAIR OF 1892.

IF we are to have a World's Fair in 1892, by all means let it be held in Chicago which is, all things considered, the most wonderful city in the world. The facilities for reaching Chicago by rail or water are unsurpassed. Given reasonable notice, and Chicago will be able to accommodate comfortably, luxuriously if they please, all who are likely to visit it. No city on earth has so many energetic business men,—men who are able to command any amount of capital necessary for the successful fruition of great enterprises. Chicago will be more convenient for citizens of this country than any other point, and a day's trip by rail will bring all European visitors to it from New York, Baltimore or Philadelphia, and citizens of Oriental countries can reach Chicago quicker than either London, Paris or New York. If the next World's Fair is held in Chicago, it will be the most gigantic, useful and successful exposition ever projected for the material benefit of mankind.

LATEST FROM "THE BIG FOUR."

JULY 22, 1889.—in the case of the Consolidated Roller Mill Co., vs William S. Coombs, in equity before the U. S. Circuit Court for the Eastern District of Michigan, at Detroit Mich., Judge Henry B. Brown presiding, the defendant moved to stay the issuing of the injunction against further infringement by him of the roller mill patent which it had been decreed that he was infringing, on the ground that the "plaintiff was not a manufacturer but derived its profits from selling or licensing its machine and that the damages to the defendant by stopping his mill would be out of all proportion to the amount of plaintiff's license or to any damages that would be occasioned to it by defendant's continued use of machines."

After reviewing the various authorities pertinent to the case, Judge Brown concluded his opinion as follows: "We are willing that he (defendant) should have twenty days to make the necessary changes. At the expiration of this time, the usual injunction will issue to stand until the final decree, after which, if an appeal be taken the propriety of continuing the injunction under the 93d rule, will be considered by the Court."

We are informed that the Consolidated Co., are arranging to push their claims in every quarter as rapidly as can be done.

MILLERS' NATIONAL ASSOCIATION MATTERS.

THE Executive Committee of the Millers' National Association met at the Grand Pacific Hotel, Chicago at 11 o'clock A. M. on the 12th inst., in response to the call of President Greenleaf. Mr. A. R. James of Buffalo, N. Y., was elected chairman of the executive committee, and C. B. Cole, Chester Ill., Geo. H. Plant, St. Louis Mo., and A. C. Loring, Minneapolis Minn., were elected members of the sub-executive committee.

A committee was appointed to revise the constitution of the National Association and present the same for action at

the next annual convention. Attention was called to the several patent matters and threatened suits, and same were carefully discussed. Communications were read from A. A. Freeman, reporting progress of the Export Bill of Lading committee, appointed at the last annual convention, also circular letter from the Secretary of State relative to the International Congress, to be held at Washington D. C., October 2, 1889. It was decided to appoint a committee of three from each milling state, to call the attention of the governor of their respective states to the importance of sending delegates to this International Congress, and to urge the appointment of delegates to represent the milling industry of our country. The committee listened to the report of the new Secretary, Mr. Frank Barry, and gave such instructions for his guidance as they deemed necessary.

A POINTER FOR MILL OWNERS.

MR. Millowner, we want to say a word to you, and we want you to think about it.

You perhaps own a mill having a capacity of 100 barrels or much more per day. The work of your mill is sometimes pretty good—sometimes just fair—and sometimes it seems as if Old Nick was playing the mischief somewhere in the establishment. You don't know perhaps much of any thing about milling yourself, and cannot discover the cause of the serious trouble when it comes. You have a seance with your head miller, which ends in making some improvement needed, and things go on passably well for a while.

We will give you a pointer. Your head miller, no matter how well qualified he may be, by working right along in the same surroundings, day and night the year around, gets "rusty." He gets tired. He gets so used to seeing things, (that he really knows, if he thought about them, should be improved), that he don't see them, so to speak. He needs a mental and moral stimulant to tone his mechanical system up, and to get his mechanical eyes to the proper focus, so that he can see quickly everything requiring attention.

The simplest, pleasantest, cheapest and most effectual way to do this with a good head miller, is to give him time and money, and send him out on a tour of inspection among brother dusties in other good mills. Give him a month at least, even if you have to shut down for a month. *It will pay.*

There is another thing we would like to say here, and that is, every good mechanic has a strong love of approbation. Therefore—if he serves you well, give him now and then a word of modest praise, showing him that his efforts in your behalf are known and appreciated.

ENGLISH CAPITAL IN AMERICA.

THE press of this country has been saying a good deal on the above subject of late, some favoring it and others bitterly denouncing it, but it is quite evident that the American owner of property is generally quite willing to exchange it for good gold without stopping to question whether it comes from persons of a British, German, French, or other nationality, and we believe he is quite right in doing so. If foreign capitalists invest their money in our railroads and manufacturing enterprises, they will certainly take a deep interest in the welfare of the country. It will take countless millions to develop the great natural resources of the United States, and we see no reason why foreign capital should not be invited to help to do the work. We think we have as shrewd and capable business men as any other nation, and believe they are quite able to take care of themselves. We do not think it proper that aliens should be allowed to hold

CONTINUED ON PAGE 92.

Vortex Dust Collector Co.

MILWAUKEE, Wis., August 6th, 1889.

To Our Friends and Customers:

In response to several inquiries made by you, we have deemed it proper to address you upon the subject of certain intimations and advertisements, demands for royalties, damages, etc., sent out by the Knickerbocker Co. and others, who claim rights under the Morse patents upon Dust Collectors. That company are attempting to claim that all Dust Collectors which employ the principle of the application of centrifugal force to remove dust particles from air, infringe their patents, and have been indulging in pretentious claims of monopoly, based upon the ownership of those patents.

We have had the subject carefully investigated, and have embarked in the manufacture of the VORTEX DUST COLLECTOR after the most careful attention to the question of whether we are infringing the rights of others or not. We would not manufacture or offer it to you if we thought there was any danger of liability on our part as manufacturers, or on your part as users of that device. We are abundantly responsible for any damages that may be obtained by decree of court against us, and are both able and willing to protect you from all loss and damage on account of your use of the machine made by us. We have the results of the investigation of this field by three firms of patent lawyers, who have each investigated the question involved independently of the others, and we are advised that we are not in danger of being held accountable to the Knickerbocker Co.

To obtain a speedy legal decision upon the points involved, we have agreed with that company to an amicable contest, the result of which cannot but be in our favor. The Knickerbocker Company in its turn have agreed with us not to molest our customers. We covet no warfare with anyone, and propose, so far as we can control matters, that the rivalry between the Vortex and Knickerbocker Companies shall be amicable and honorable, and we propose to protect our customers absolutely from any and all molestation on the part of other patentees or manufacturers. So far as we can, without encroaching upon the lawful rights of others, we purpose to fill the world's demand for Dust Collectors, and we offer you in the Vortex the best practical Dust Collector for all work ever put together, and at reasonable prices. We will protect any and all who buy it and who use it, from damage or suit, and we therefore request you not to be annoyed or deterred by any threats or rumors which you may hear. If you will promptly advise us of any such, or apprise us of your special needs, we will take pleasure in satisfying you that we mean what we say and are able to perform what we promise.

Hoping for your further patronage, and with the best wishes for your prosperity, we are,

Very truly yours,

VORTEX DUST COLLECTOR CO.

large tracts of land, and that matter is regulated by law, but as to other matters let them invest with us, and we believe the result will be satisfactory on both sides of "the big herring pond." On this subject a late number of the *Financial Times*, London, says:

The prevailing outcry in America against the invasion of English capital reminds one of the fable about the wolf who picked a quarrel with the lamb for fouling the stream which was really running from the former to its intended victim. In the face of the enormous amount of money that has crossed the Atlantic from this country simply to enrich smart Yankee vendors of sterile tracts of land, vamped up for promotion purposes into ranch companies that have never paid a dividend, the proposal to tax non-resident holders is a little "too thin." The alarm has doubtless been caused by a few recent attempts on the part of English capitalists to secure sound industrial enterprises in America, but, notwithstanding some success in this direction, the balance is largely against the English investor generally, so that it is adding insult to injury to point to the large tracts of land owned in England as a cause of grievance. The acquisition of profitable industries by Englishmen should be regarded by honest Americans as a *quid pro quo* for much disappointment in land bargains, instead of making the latter a vent for jealousy, consequent on the former.

There has also been a feeling in all parts of Europe especially during the last year, that war was liable to break out at any time, and capitalists desire to put their money into a country which they believe safe. This feeling of foreigners that the United States is a safe country in any event, is gratifying to all our citizens.

CORRESPONDENCE.

Editor The United States Miller and Milling Engineer.

DEAR SIR:—In your issue of July 1, I find the following:

MR. ENGINEER:—The question why you are burning so much more coal this week than last, and why it takes so much more or less to run your plant than that of your neighbor, with about the same power, is one that you should lose no time in learning to answer correctly."

The fact is that few engineers have the appliances to determine the quantity of power consumed in the machinery and the running of the shafting. The quantity of power which a given amount of coal will produce has also been a mooted question. The following results have been determined by the use of the Emerson power scale (Boston, Mass.) In the using of bituminous coal which cost \$4.29 per ton, it has been found that it cost 43c. per day more to produce the same amount of power than it did in using another kind of the same class of coal which cost \$4.40 per ton, where less than two tons of coal were consumed per day.

Another important discovery was made that while the machinery appeared to be in good working order the gross power required to drive the machinery and shafting was excessive. It was found that by driving the shafting alone that a large part of the difficulty was in that department, and after making such changes as were apparent it appeared that a saving of 30 per cent. of the power consumed in driving the shafting had been saved. Moreover, it is evident that the saving does not stop with the simple saving of coal, but it extends to the wear and tear of belts, shafting and lubrication.

Yours truly,

E. A. THISSELL.

Boston, August 9, 1889.

IT MUST HAVE BEEN CAMP MEETIN' TIME.

A lineal descendant of Ananias sends the following to the *U. S. Miller* from that farfamed city of Oshkosh, Wis.

"I don't remember of having experienced a particularly hot day, but I'll tell you what I have seen. One night, three years ago this fall, I was camping out in the big woods of Wisconsin. The day had been pleasant, but along about mid-

night I experienced a peculiar sensation. It was with great difficulty that I could breathe. My throat and nose felt as though they had been choked up with something strangely disagreeable. A hot wind blew through the pine trees over my head, and the balsam boughs upon which I was lying burned my flesh like red-hot gridirons. I tried to move, but without success. I had lost all control over my muscles, and there I lay a helpless prisoner, listening to the ground cracking for miles around. After an hour of most excruciating agony I heard something patter upon the earth. It must be rain, I said to myself, closing my eyes. Then I fell asleep. When I awoke next morning it was freezing cold. I tried to get up, but I could move neither limb nor muscle. I was pinned to the ground. It had been so hot that it had started the gum out of the pines, and this beastly stuff had fallen upon me, drop by drop, until it covered all my clothes and run out upon the ground. Then the weather turned cold and froze the stuff, and there I was stuck fast to the ground. I had to lay there until the sun got hot enough to release me. The next day I passed lots of farms where popcorn had been popped on the stalks, and a prettier looking sight I never saw. The stalks looked like huge sprays of white flowers."

TEACHING BOYS TRADES, ETC.

A LETTER FROM A MECHANIC.

Editor United States Miller and Milling Engineer.

My attention was attracted by your editorial on the advisability of teaching our boys trades, etc., recently. I have also seen something of a similar nature in a New York paper in which the writer works himself into a perfect fit of virtuous indignation on account of the demands of mechanics in New York to limit the numbers of apprentices to certain trades. If people would take a little time to consider this question, and be honest about it, I guess there would be less "gush."

In the first place, everyone cannot become a *good* mechanic for a variety of reasons. If instead of bemoaning the fact that the mechanics of our country do not stand by with open arms to welcome all the graduates of our public schools to their ranks and to impart all necessary information to all applicants, regardless of consequences, people would look around and then ask themselves if the various trades were not already overcrowded, and be governed in their opinions by what they saw and heard, I honestly believe that they would not rush so rashly into print with their criticisms.

In a general way I may say that the competition in all modes of making a living is about the same. If I should make a difference I would say, that the lower the rank of life, the more bitter is the competition. It is assumed by the writer on this question, that to be a mechanic, and a *good* one, is to be assured of a good living, and those same people will always explain the fact of there being so much trouble with money among this class by pointing to the "grog-shop."

Work for the very best of mechanics cannot be had at all times, simply because there is not enough to go around. I think, taking a period of twenty years, say from 20 years of age to 40 in the life of a mechanic, one-third of it is spent in waiting for a job, and this among the best. There are seasons when it is difficult to find men enough to supply the demand, but such times are not frequently of long duration. Employers, bothered at such times, fall into the error of assuming such a state of affairs to exist the year around, and if fond of writing for the press, indite an article on

"The propriety of teaching our boys trades."

One of the most amusing things in connection therewith is that these same

people, if they have boys, will make every sacrifice to keep them in some expensive college with the expectation that they will ultimately enter one of the "learned professions." It takes as long to become master of a trade as it does of a learned profession, notwithstanding the general opinion to the contrary, and as long as the public maintains its present views in regard to the remuneration attached to trades and professions—their social standing, etc., it is absurd to discuss the benefits of learning a trade. The reason—the only true reason why boys do not learn trades, is because they do not want a *trade*. A boy with a good school education, if observing, will conclude that a professional man can earn a living with less effort and have more leisure than the mechanic. The social scale of the two classes is wide apart, as every one knows, and I admit that the distinction is right under the present condition of affairs, for the average workman has neither taste, time or that peculiar ability necessary to become a success in the best of society. The workman has often little regard for his personal appearance, his language and his manners. A truly good workman is as a rule quiet, thoughtful and honest. The workman is perhaps quite as much to blame as society for the barrier apparent between them, as is evidenced by the fact that many workmen have risen to the highest ranks both in society and official and engineering circles. The average American does not take kindly to the duties of the mechanic and would almost without exception quit the bench, if he could see his way clear to make a living otherwise. Men are creatures of circumstance, and in the struggle for existence it is and always will be the rule to look out for No. 1, and "the devil take the hindmost."

A. M. P.

INTERESTING TO SMALL MILLERS.

Editor United States Miller:

Among the good things brought forward recently that will enable the small miller to hold his own and compete with his more pretentious rival, is the one reduction system patented to O. C. Ritter, of Springfield, Mo.

It has been satisfactorily tried, and is already in use in quite a large number of mills, and has mostly been placed by the small mill owner himself.

It has superseded the Burr method and given satisfaction in proportion to the care and attention in manipulating the flow of the mill. The principles embraced in this short milling process are higher differentials than formerly used, and finer cuts for slow roll, which is equivalent to shallow corrugations acting as holder for the bran fiber, while the fast roll acts as a scraper, rubbing the flour particles from the same. A large per cent. of break flour being made at the grinding operation, the middlings are separated in two grades and reduced on separate smooth rolls. The entire reduction plant may consist of three sets of rolls, one corrugated and two smooth. The bolting is accomplished on three or more reels, as the extent of the plant or means of the operative will allow. The capacity in this instance will depend on the length of rolls employed. It is the least expensive of any other system for small mills, as usually they are already equipped with bolting appliances and the principal outlay is in reduction rolls.

Again with small mills the owner is frequently the operative, and desires to do with as little extra help as possible. Therefore the less complicated the plant, the easier managed. With a longer system of several breaks and reductions a small change in the setting of one break or reduction may load up a subsequent machine and tail good stock to the feed bin, before the operator can realize the trouble. Every one knows that the

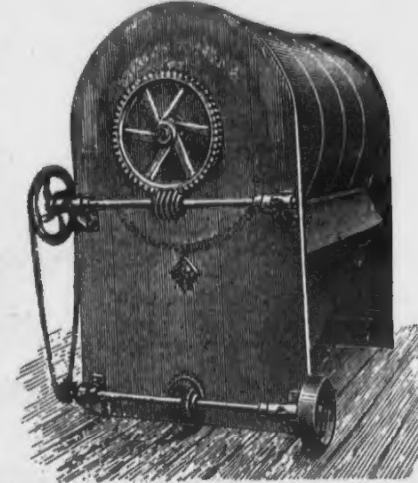
miller who operates custom mills has

little enough leisure at best. Between looking after customers and the general manipulation of the plant, he must hope to be visited with as few "choke ups" as the law will allow.

Respectfully,
ONE BREAK.

AN ENGLISH DUST COLLECTOR.

AR. W. INCE, of Hayle, England, has just placed on the market a dust collector which he calls the "Unique." We describe and illustrate it herewith.



The framework of the machine can be made of wood or iron (preferably of sheet iron), and the outer covering of wire gauze or perforated metal, inside which the filtering medium travels at a slow pace, while a suitable knocker is arranged underneath the filtering sections, so that as they pass in succession over the knocker all the dust from each section is shaken out into the hopper at the bottom of the machine, from which it is delivered by a worm conveyor.

The dust-laden air can be blown into the machine from the exhaust fan, which can be attached directly to the machine, or connected thereto from a distance; or the air can be caused to pass through the apparatus by suction created by an auxiliary exhaust fan. When suction is employed to cause the air to pass through the collector, an additional air-tight covering is used over the perforated metal shell, and is provided with an air opening connected to the fan, from which source the purified air is blown into the atmosphere.

The machine can also be constructed exclusively of a metallic substance throughout, thus rendering it fire-proof.

A series of brushes, made of any flexible material, round the circumference of the perforated cover remove the dust as the cylinder slowly revolves, and these brushes are made to overlap each other, so as to prevent dust escaping with the outgoing air currents. The centre frame revolves only once in ten minutes.

STREET CLEANING IN NEW YORK.—A new street-sweeping machine is on trial at New York. The machine is a large water tank, running on three wheels, underneath which are placed large rollers on scrapers set diagonally with pieces of rubber instead of bristles hitherto used in street sweeping. Under the driver's feet is a water pipe, from which copious jets of water are thrown, washing away the sand, which is swept into the gutter and washed into the sewers. The machine thoroughly cleaned two blocks on Fifth Avenue in 12 minutes.

THE SUN AND WIND.

A Dispute once arose Betwixt the north Wind and The Sun, or at least *Æsop* says so, as to their Respective Superiority, and they agreed to See which could first induce a Traveller to part with His cloak. The North Wind began and blew through his Whiskers with a very Cold Blast, indeed, accompanied with a shower of wet, Wet Rain. That's where the Wind got Left. The Traveller Exclaimed: "Darn this Journeying on Foot, anyway. I shall save time, attain a Green old Age, and leave a respectable name to my children if I travel on that Famous Line, the Wisconsin Central." And he "came In out of the wet," and bought a ticket, and rode in the Luxurious Coaches, and slept at night in the Magnificent Sleepers furnished by that line.

THE CRANSON ♦ SCOURER

IS ACKNOWLEDGED TO BE

**The Leading Scouring, Polishing and Separating Machine
ON THE MARKET TO-DAY.**

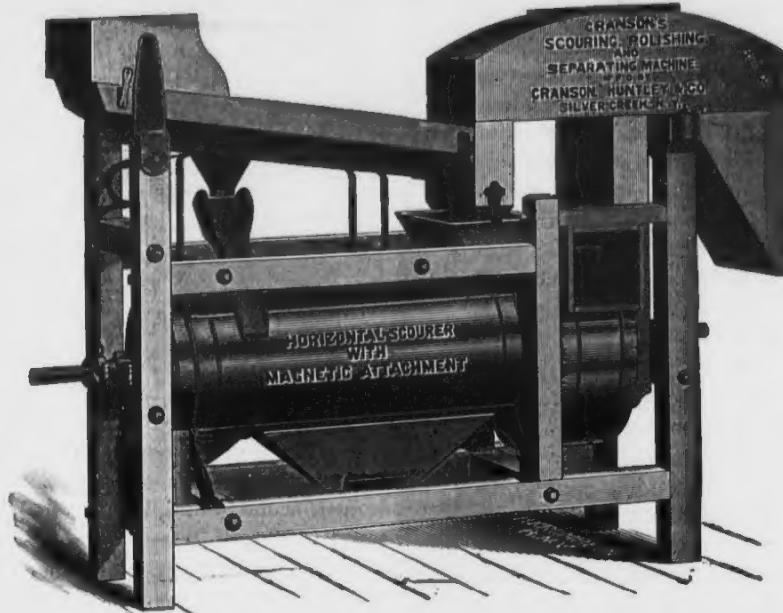
Two of these Machines are being placed to one of any other make.

WE ALSO HAVE THE BEST

Dustless Receiving and Elevator Separator

Ever Placed in any Mill.

★ Write for Rock Bottom Prices and Full Information. ★



OUR HEADERS:

CRANSON'S WHEAT SCOURER AND POLISHER, With Magnetic Attachment.
CRANSON'S BUCKWHEAT SCOURER AND POLISHER, With Magnetic Attachment.
CRANSON'S ROLLER BUCKWHEAT SHUCKER.
MONITOR DUSTLESS RECEIVING AND ELEVATOR SEPARATOR.
DIAMOND DUSTLESS CORN SHELLER AND SEPARATOR.
DIAMOND CORN SHELLER.

Huntley, Cranson & Hammond,

Succesors to CRANSON, HUNTLEY & CO..

SILVER CREEK, NEW YORK.

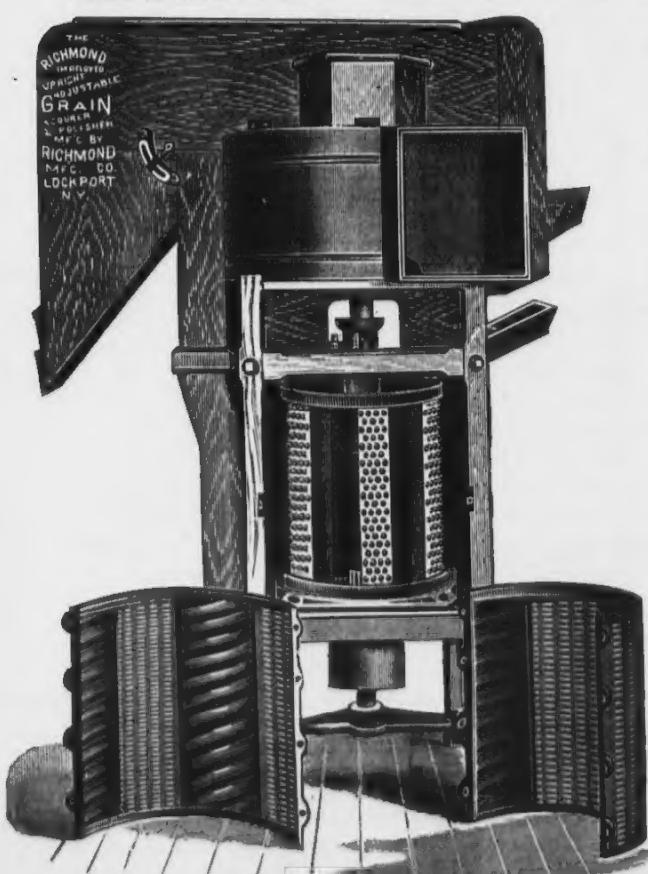
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To Derive the Benefits that can be Obtained by Using the

Richmond Grain Cleaning Machinery

AND

BRAN DUSTERS



Which are without
doubt the

BEST

and Most

EFFICIENT LINE

OF MACHINES

ON THE

MARKET.

We make this state-
ment, with the
knowledge that

PROMINENT MILLERS

ENDORSE IT.

The Richmond Improved Upright Adjustable Scourer and Polisher.

RICHMOND MANUFACTURING CO.,
LOCKPORT, N. Y., U. S. A.

**Condemnation of Competitors
IS THE MEASURE OF SUCCESS.**

I CHALLENGE the wheat heater concern advertising their heater as "replacing the Welch" to publish the terms on which the Welch Wheat Heaters are replaced. I could replace any other make of heater by allowing a big price for it and selling mine low, which is equal to paying a bonus.

The "Welch" is fully guaranteed, sold on its merits and used more than any heater on the market.

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ST. LOUIS, MISSOURI.

A. B. BOWMAN.



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MILL SHELLER.

The most Compact, Durable, Best Sheller
and Best Cleaner.
Takes up but little room, runs at low rate of
speed, requires no attention. It is in
every respect the

Best Sheller ever offered to the Public.

Please mention this paper. Write for full particulars to
UNION IRON WORKS, - DECATUR, ILL.

Mfrs. of "Western" Shellers, Cleaners, Separators, and all kinds of Elevator Machinery.

Leffel Water Wheel,

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The "OLD RELIABLE" with Important Improvements, making it the



Most Perfect Turbine now in Use.
Comprising the **LARGEST** and the **SMALLEST**
Wheels, under both the **HIGHEST** and **LOWEST**
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Write us for **NEW PRICES** before buying else-
where. New shops and New Machinery are provided
for making this Wheel. Address,

JAMES LEFFEL & CO.,
Springfield, Ohio or 110 Liberty St., New York.

OUR ENGLISH LETTER.
(From our own Correspondent.)

LIVERPOOL, AUG. 8, 1889.

EXCEPTING for a day or two the weather during the month of July has been very unsettled and storms of rain and hail have laid at least 25 per cent. of the grain, before it was matured for its milky stage. Almost everything however depends on this; if the hot sunny weather we have been having during the past few days will continue during this month we shall be able to obtain a splendid wheat crop in perfect condition for milling. Wheat cutting will commence throughout the South of England this week and by the middle of the month it will become general throughout the greater part of the Kingdom. The reports from farmers which are now being freely published of almost every district, point to the conclusion that the yield of wheat will be an over-average one throughout the country, not so heavy in bulk of straw, as has sometimes been the case, but remarkably bountiful in the fillings up of the heads with plump perfect grains, the result of the admirable blooming and kerning season at the latter part of June. These conditions do not of course, apply to those cases where the crops are lodged by the storm, some of which it is to be feared will be very much damaged in consequence. The price of nearly everything in the country has been gradually rising during the past month and wheat and flour have not been far behind the general rule. In one district, Leeds, the millers have raised the price of flour three times during the month of July, amounting altogether to 3·6 per sack of 280 lbs. or a 12 per cent. rise on the average price of flour. The present trade is however hampered by the belief that the current stiffness of the cereal market will not outlast the present month, and it is only therefore for immediate delivery that such a rise has taken place. From the official returns, sent in this month from the principal organizations of skilled trades we gather, that the labor market is in a remarkably prosperous condition with but few exceptions there is an improvement in demand and increased remuneration. This advance is most clearly indicated in the ship building trade, in the allied engineering districts and in those branches of production and manufacture which supply them with material. In some cases the activity is almost unprecedented.

The milling engineers are now so very busy that much work is being done by contracts for them by outside firms, and the result of all this is that the English millers can hardly find time to look round. The French International Congress to which some 300 English millers were going to attend, will therefore be robbed of some of its number, and I now estimate about 180, although when the last moment comes it may be possible that barely 200 including ladies may visit Paris. Three very interesting papers will be read at this meeting by Mr. Francis Ashly, Mr. J. Murray Case (The Short System Advocate) and Mr. J. Macdonald.

Your readers will notice that this letter is dated from Liverpool instead of London and I am glad I took my business fly-around before making this communication, for at Durham I heard the following most extraordinary story which in certain cases I have no doubt is correct, judging by after results. Your readers will no doubt remember that I communicated to the UNITED STATES MILLER, published last February a few particulars of the Northeastern Flour Ring and it will be remembered by some, what a miserable failure it turned out on the whole to the "Press" exposing the rosy scheme. This scheme has now become past history and would no doubt have soon completely faded from the minds of the British public, but for the subsequent wide-awake

action of some wise gentlemen of the Inland Revenue who got possession of one of the plain printed prospectuses which was marked "private and confidential." Unfortunately for certain millers the story they made out was, that they all had extra flourishing business concerns, waiting to be turned over to the proposed Ring and that their mills were even as undeveloped gold mines. The figures set forward by the financial expert, were naturally supposed to be reliable and showed that they had been "doing" so much for the past few years. These transactions made out a clear profit—well, ever so much on the tide of the satisfactory profits. Altogether a glowing tale was made out to the British Public; The Miller of Dee of Song fame ought to have been a discontented person by comparison with many of those millowners who sought to turn over their concerns to the suggested syndicate. The cruel point (?) does not come in however until on comparing the figures of the millers financial expert with their own report made in answer to those awkward enquiries that are annually addressed to those whose annual incomes (over £150) are liable to be taxed to the extent of sixpence per pound sterling, the Inland Revenue Officer demanded for her Majesty the balance between the figures set forward by the firms figures so far as taxable profits had been "returned" and those certified by the expert examiners employed in view of the syndicate. The millers, rather than render themselves liable to "subsequent proceedings" for attempt to fraud, quietly satisfied the Somerset House authorities by paying the difference and there are still heard in the northeast corner of England, observations bearing upon the Ring and the Inland Revenue officers that would not bear the telling.

Meeting one of the members of the council of the National Association of British and Irish millers who attended the Liverpool Corn Exchange, I was able to learn what was done at the Council-meeting which was held at the offices of the Association at 61 Mark Lane London E. C. on Wednesday last the 31. ult. It appears that the council had under consideration the desirability of reviving the "Millers Mutual Fire Insurance Association" so that they could get every allowance made for the safeguards they had adopted during the last year or so, namely automatic sprinklers, electric lighting in place of oil and gas and the millers trained fire brigades. After a good deal of time having been wasted over the initiating of this step, its consideration was adjourned to convention-meeting. The Indian wheat question was also considered at great length, and a small committee was appointed to take active steps after the Paris Congress, where a good discussion will take place as this question will specially occupy two hours of both the French and English sections. When the council were considering their annual report, Mr. Wilson Marriage officially brought before the council the desirability of offering a silver medal to the grower of a certain quantity of British wheat of special milling value. This step it is thought will encourage the production of a better variety of wheat and will pay the winner of the medal by enabling him to obtain a splendid profit, by selling his wheat as seed wheat to the farmers in his neighborhood. This, in a year or so would raise the standard of native wheats now ground by the British millers. The programme of the Paris convention has been slightly altered but only as regards the place of meeting which will now take place in the Orangery, in the gardens of the Tuilleries, which has been lent for the occasion and specially decorated by the French government.

There has just been published the report by the British Vice-Council at Moscow, on the prospects of the harvest in Russia in 1889 in which it is stated

that the governments of Tamara, Timbrisk, Tamboff, Voronesk, Riagan all represent the winter sowings to be completely ruined, owing to the small quantity of snow and the severe frosts followed by intense heat in the early spring. In many cases, farmers replowed the land which they had sown last autumn. In the government of Moscow last autumn's sowings have also been replowed, but from the Mojaisk districts reports are more favorable. The spring crops promised well but were at the time of writing suffering from drought.

From Budapest I hear that the unfavorable weather which prevailed during the last week of July caused considerable damage to the grain crops. The wheat harvest is expected to be poor to medium, both in quantity and quality. Rye and barley are also poor, and of inferior quality. Maize promises, for the most part, a good to middling harvest.

L. MAYGROVE.

NEWS.—JOHNSON, KIRKPATRICK & Co., of Lebanon, Tex., are about to move their flour mill to McGregor, Tex., and increase the capacity to 75 barrels per day.

BURNED, July 22, Ryerson & Son's mill at Iowa City, Ia.

MEDICINE LODGE, Kan., will pay a good bonus for a flour mill.

WARRINGTON & Co., of Pender, Neb., have dissolved partnership.

PAYNESVILLE, Minn., offers a bonus and site for a 75-barrel flour mill.

STONE HUBER & Co., millers of Phalen, Ky., have sold out to Philip Huber.

G. W. WEBB has purchased the mill of D. Omen & Son of Francisco, Va.

B. F. WRIGHT & Co. are successors to Fred J. Schupp, miller at Marceline, Mo.

WILLIAMS & CRITCHETT, millers at Oxford, N. C., are succeeded by W. M. Herbert.

AT Dunkirk, Ind., July 24, the Slawson elevator was burned. Loss \$3,000; insurance \$1,200.

P. B. QUAINTEANCE succeeds to the business of Jesse Quaintance & Son, millers of Golden, Col.

THE Otto grist mill just above Fredonia, Ks., was recently damaged by floods to the extent of \$1,000.

J. S. BERRS & Co. have moved the flouring mill owned by Evans & Co. at Dempsey, Ga., to Ashburn, Ga.

AT Mattoon, Ill., July 29, William Kirkley's grain warehouse was burned. Loss \$11,000; covered by insurance.

JOHN L. DENTON will hereafter conduct the milling business heretofore carried on by Denton & Hitch of Cuba, Mo.

B. R. MOFFETT, miller at Waxahachie, Tex., is building a 40,000 bushel elevator, and making improvements in his flour mill.

THE "Knob City Flour Mills," of Russellville, Ky., owned by Carroll & Barclay, are about to be enlarged and remodeled.

AT Mount Forest, Ont., Aug. 5, William Orr's grist mill and a bridge were burned. Loss, \$10,000; insurance of mill, \$8,500.

THE three mills in Davenport Ia., are now under one management. Consolidation of interests seems to be the order of the day.

MESSRS BROWN & EDWARDS have bought the Sylvester Bros. Mill at Boscobel, Wis., are refitting it and will soon start up for a long run.

AT Mattoon, Ill., July 27, the old Chapin Elevator, valued at 2,000, and belonging to E. & L. Jennings, burned at 11 p. m. It was dry as tinder and contained about 50 tons of broom corn belonging to several parties. Total loss \$5,000; partially insured.

AT Camden, Me., July 26, Johnson Knight's saw and grist mill, together with all the machinery, was burned. His loss is \$6,000; partially covered by insurance. St. Clair, Dunbar & Trim, dealers in building supplies and lumber, loss \$1,500; they had no insurance.

AT St. Cloud, Minn., July 24, the Richmond elevator, owned by Messrs. Auman, Ladner & Lommel, was totally destroyed by fire. About 6,000 bushels of wheat which were stored in the building are also a total loss. It is not known how the fire originated, but it is believed to be the work of tramps. Loss, \$8,000; insurance, \$1,500.

AT Ridgetown, Ont., July 11, the woollen and carding mills of John Moody & Sons were burned. The Diamond Roller Flour Mills, nearby, were badly damaged. Moody & Sons' loss is \$25,000; insured in the Waterloo, Mutual, Lancashire and Phoenix for \$2,000 in each, and in the Mercantile for 2,500 and in

the Royal for \$5,500. The loss on the Diamond Mills is covered.

THE Reliance Gauge Co., of Cleveland, O., has recently received, beside numerous home orders, an order from the Porter Mfg. Co., of Syracuse, for six No. 2 Reliance Safety Water Columns for boilers which they are furnishing a Cuban customer, and an order from Robert Boker & Co., for a like number. The demand for these safe-guards is wide spread and rapidly increasing as their merits become recognized.

THE St. Louis United Grain Elevator company organized July 19th by the election of the following officers: President and general manager, Webb M. Samuels; vice-president, George W. Updike; secretary and treasurer, B. L. Slack. The company is capitalized at \$2,465,000, with a bonded indebtedness of \$1,200,000. The capacity of the consolidated elevators is 10,000,000 bushels.

CANADIAN FLOUR DUTIES it is now definitely understood that the Canadian government will not make any alteration in flour duties till the next session of the Dominion parliament, early next year. Canadian millers complain of discrimination in favor of the United States millers who import wheat from the United States. Sir John Macdonald has promised to place this part of the Canadian tariff on a prominent basis at the next session of parliament.

THE Reliance Gauge Co., of Cleveland, O., have received through the Variety Iron Works, an order for five of the Reliance Safety Water Columns, from the Brooklyn Street Railway Co., for the boilers which they are adding to their Electric motor plant. They have also recently received second and third orders from Moerlein Brewing Co., and the Windish-Muhlhauser Brewing Co., of Cincinnati. Both of the latter orders came through the Laidlaw & Dunn Co.

THE J. B. Alfree Mill furnishing Co., of Indianapolis, Ind., will occupy their new quarters 76 to 86 Shelby St., in a few weeks. Their shops will be quite extensive, covering two acres of ground and will be equipped with all the latest improved machinery and tools. The large business they have been doing has obliged them to relinquish their present shops as the space was quite inadequate to their wants. The works are on Shelby, Sanders and Munson Streets.

NEW MILLS.—Articles of incorporation have been filed by the Puget Sound Milling Co., of Seattle, Wash. Terr.—Brents & Smith of Benton, Ark., are about to build a flour mill.—At Owensboro, Ky., J. W. Gilbert has completed a 50 barrel mill.—A 75 barrel flour mill is being built by E. R. Graves at Stillwater, Minn.—A \$12,000 roller flour mill will be built at Aurora, Neb., by an incorporated company consisting of C. E. Nash and others.—A 75 barrel roller mill has lately been built by Jarboro & Campbell at Springfield, Ky.—The Farmers' Milling Co., will build a 50 barrel roller mill at Lebanon, Tenn.—The Cayuga Milling Co., of Cayuga, Ind., has been incorporated. Capital stock \$20,000. Directors, Monroe G. Hofford, Eli H. McDaniel and Samuel K. Todd.—The Capital City Oatmeal Co., with a capital stock of \$20,000 has been incorporated at Des Moines, Ia.—H. Linehard, whose mill at Handsboro, Miss., was recently burned, is rebuilding.—The Sweetwater Mill & Gin Co., are building a 50 barrel roller flour mill at Sweetwater, Tex.—A 40 barrel roller flour mill will be built at Manchester, Tenn., by the Coffee County Farmers' Alliance.—D. L. Cunningham of Williamston, Ky., has completed a 50 barrel roller mill.—The 50 barrel mill being built by G. B. McDonald at Jefferson, Tex., will be in readiness to operate Sept. 20th.—The Gray Milling Co., with a capital stock of \$25,000 has been incorporated at Flint, Mich.—Weaver, Miller & Co., will build a 70 barrel roller flour mill at North Grove, Ind.—The Pine Bluff Mill and Elevator Co., with a capital stock of \$50,000 has been incorporated at Pine Bluff, Ark., for the purpose of building a flour mill and grain elevator at that place.—The Hall Milling Co., has been incorporated at Indianapolis, Ind. Capital stock \$50,000. Directors Chas. E. Hall, William Scott and C. B. Hall.—The Nashville Milling Co., Nashville, Tenn., will build another mill.—J. H. Stout of Owenton, Ky., is building a mill of 100 barrel capacity.—Mearns, Watkin's Bros., Mt. Ida, Ark; The Williams Co., of Frances Ark; J. H. Walker & Co. of Reidsville, N. C; Berents & Smith, of Benton Ark; Vaughn Bros., of Glasgow, Ky; W. R. Meyers, Greensburg, Ky; are all building or remodeling mills.

For a green transparent varnish for metals, grind a small quantity of Chinese blue with double the quantity of finely powdered chromate of potash (it requires the most elaborate grinding); add a sufficient quantity of copal varnish thinned with turpentine. The tone may be altered by adding more or less of one or the other ingredients.

SPECIAL STAMPERS OF SHEET METALS.

We Stamping and Pressing of Sheet Metals for All Classes of Work. Also Tinning, Galvanizing & Japaning.

—ALSO SOLE MANUFACTURERS OF—

SEAMLESS STEEL BUCKETS

INSIST on having this Bucket furnished when ordering.

Ask your dealer for the Avery Pat. Seamless Steel Elev. Bucket.

H. W. CALDWELL, General Agent.



We do not advertise Seamless Elevator Buckets and fill orders with "Pieced Ones"

SEND FOR DISCOUNTS.

THE AVERY STAMPING CO.,

—SUCCESSORS TO—

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101 West Washington Street, CHICAGO, ILL.

**The Link-Belt Machinery Co.**

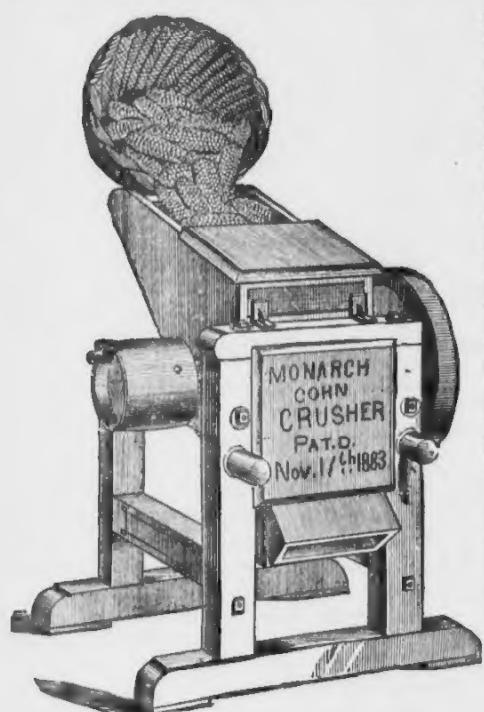
Are Prepared to Furnish Machinery and Appliances for

Transmission of Power

After the most approved Plans, by use of

MANILLA ROPE.

For Particulars and Estimates apply to them at

CHICAGO: 11 to 23 S. Jefferson St.**MINNEAPOLIS:** 200 to 202 Washington Ave. S.**The Monarch Corn and Cob Crusher**

Is the latest and best Corn and Cob Crusher in the world. It does away with all the objections of grinding cob. It has a greater capacity with less power than any other Crusher made. It granulates the cob fine, enabling the Buhr or Rolls to grind from 25 to 50 per cent. more feed than can be ground in the same time from corn and cob crushed in any other Crusher. It does not jar the building like other Crushers. It can be fed any way most suitable to user. The machine is made strong and durable in all its parts. There is very little about it to wear. The cylinder is constructed of steel saws placed on a mandrel separated by iron discs and fastened by a strong nut. The saws can be taken off and sharpened, if necessary. The saws run in an iron concave with teeth which retain the cob until it is cut fine. Write for circular and price of the best Corn and Cob Crusher made. Address,

THE H. G. McCOOL MFG. CO.
PERRYSVILLE, OHIO.

ESTABLISHED 1846.

**J. B. A. KERN & SON,
Merchant Millers,**

Capacity 2,000 Barrels Per Day.

MILWAUKEE, WIS.

Manufacturers of Choice Minnesota and Dakota Hard Wheat Flour.

RYE + FLOUR

By most approved roller process, guaranteed the best and purest rye flour manufactured.

WE INVITE CORRESPONDENCE FROM CASH BUYERS.

Farrel Foundry & Machine Company,

ANSONIA, CONN.

Sole Manufacturers of the Celebrated

**ANSONIA ROLLS
FOR USE IN ROLLER MILLS.**

The general experience of American Millers unites in pronouncing these rolls the very best for Flouring Mill use.

These Rolls are now used in all Leading Flouring Mills

Chilled Rolls for Paper Mills a Specialty.

Mention this paper when you write to us.

The "One Horse Shay."

Light, Durable, Well Made, Steel Axle and Steel Tires, Good Hickory Stock.

Sold Only to Users.

The best made ROAD CART for the money.

PRICE \$15.00. Send Postal or Express Order, Bank Draft or Registered Letter.

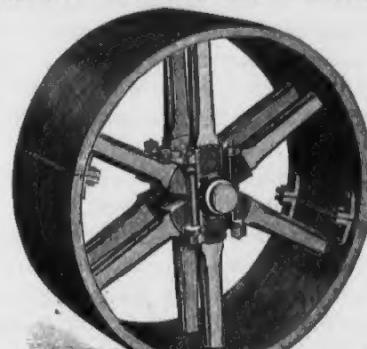
Shipped promptly on receipt of money.

Address, THE "ONE HORSE SHAY" CO.

STERLING, ILL.

Refer to the editor of this paper.

Mention this paper when ordering.

**Menasha Hardwood Pulleys.**

We are sole makers of hardwood bent rim, oak spoke arm, iron hub pulleys; gripped to shaft with bolts and using patent paper bushings. They can be put on shaft without taking it down or cutting key seats. No glue or nails used in their construction.

Also sole makers of only small split pulley 1 inch to 8 inches in diameter in the market. They are light, handsome and reliable. Best machine pulley made, and can be taken off or put on in five minutes. See above cut of them. No glue or nails in them. No key seats to cut. Also makers of only split loose pulley in the market. Send for circulars and discounts of Menasha Pulleys.

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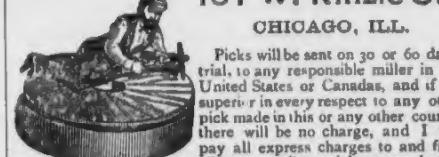
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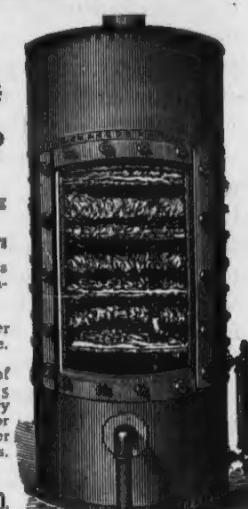
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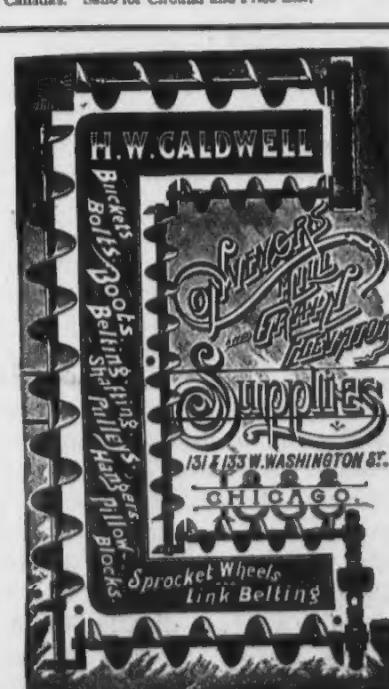
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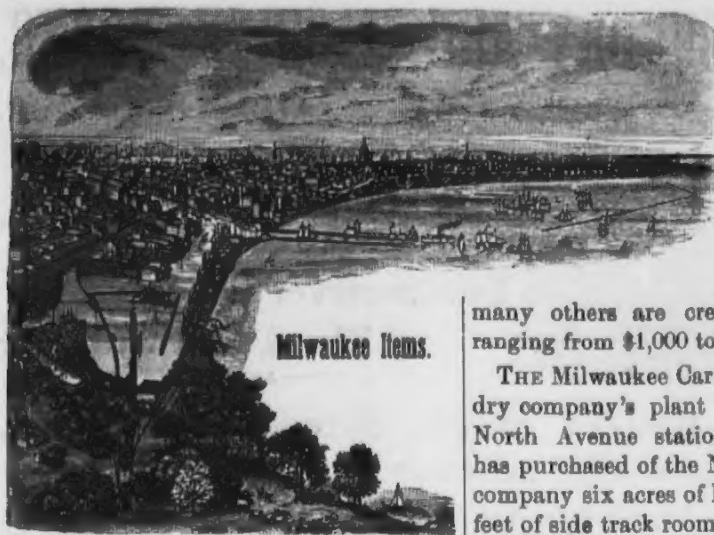
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Milwaukee Items.

JOHN W. HATCHER Esq., of Cawker City, Kansas, called on us Aug. 3rd. He reports Kansas prospects first-class.

H. N. POMEROY agent for The Geo. T. Smith Middlings Purifier Co., Jackson, Mich., called at this office recently. He is looking after the interests of the company in Wisconsin.

It is expected that during Encampment week (last week in August) Milwaukee will have more visitors than at any previous time in its history. We hope every state and territory will be well represented.

THE Prinz & Rau Mfg. Co., are driven with work to their full capacity. The demand from brewers in barley cleaning and grading machinery and from millers for cockle and grain cleaning machinery is highly gratifying.

BUSINESS among Milwaukee mills has been fair during the past month. More or less improvements have been made in nearly all the mills. The Jupiter Mill which is being entirely refitted will be ready for business by the middle of September.

AN immense wagon company is to be organized and established in Milwaukee, Wis., with Titus G. Fish at the head. The firm will be known as the Fish Milwaukee Wagon Company. Wealthy capitalists are back of the enterprise, and plans and specifications are already out for the new building.

THE Milwaukee & Northern road contemplates a new line from Iron Mountain to Escanaba, Mich. The distance is between fifty and sixty miles. Ground for the depot and docks has been secured. When the new line is completed the company will enter the iron-ore field as a prominent factor. At present its ore is sent via the "Soo" line to Gladstone.

WILLIAM BAYLEY, one of the pioneer iron manufacturers of Milwaukee, died at his home, 340 Second avenue, at August 13th, from the effect of a stroke of paralysis which he sustained recently. Mr. Bayley was born at Lancashire, Cornwall, England, November 17, 1842. He came to Milwaukee in 1856, and spent half of his years here in the manufacturing business. He was associated with William Greenslade until the latter's death, in 1874, after which he took his sons into partnership in the business, which they will continue. Mr. Bayley was first stricken with paralysis twenty-two years ago, since which time he had sustained three other strokes prior to the one which terminated fatally.

THE Milwaukee attempted corner on oats has completely collapsed and as will be seen from the following statement in the *Milwaukee Sentinel* resulted very disastrously to a number of Milwaukeeans. The *Sentinel* says: "The history of the Milwaukee oat corner whose final collapse took place August 6th would be highly interesting, if it could be written in all its details. The parties concerned are very reticent, and they include some of the leading people in Milwaukee. This collapse has cost Milwaukee from \$350,000 to \$400,000. Mr. Bigelow, it is said, has lost all the money he made last year

in wheat deals and a good deal more; and John Black, Charles Bradley, F. G. Bigelow, H. H. Camp, E. H. Brodhead, Hamilton Townsend, Angus Smith and many others are credited with losses ranging from \$1,000 to \$50,000.

THE Milwaukee Car Wheel and Foundry company's plant will be located at North Avenue station. The company has purchased of the North Avenue Park company six acres of land that give it 600 feet of side track room, and the work of erecting and equipping the buildings will be pushed as rapidly as possible. The plans for them are in the hands of the draughtmen. The location of the works is on high ground and close to the homes of the class of labor that will find employment there. It is expected to have the plant in operation by Nov. 1.

The officers of the company are: President, David C. Green; vice-president, Samuel M. Green; secretary and treasurer, Gustave Schalle. The company has a paid-up capital of \$90,000. It will manufacture car wheels and do all branches of the foundry business. The wheels will be made under the Barr patents. Some 300 men will find employment at the works.

As stated above Mr. Bigelow was manipulating the corner. While he was buying oats whenever and at whatever price he could, the Chicago grain merchants were fully aware of his transactions. They began clipping oats at their elevators early last spring, transforming No. 2 oats into No. 1, so as to be prepared for any emergency, and when the Milwaukee people complained to the Board of Trade directors of Chicago and the clipping of oats was stopped, the Chicagoans had enough of the product to protect themselves against any corner. But this was not what downed Mr. Bigelow. The firm that represented him at Chicago was Worthington, Smith & Co. One day Mr. Bigelow ordered them to buy a million bushels of oats at 29 cents. They bought two million instead, and when the price of oats went up to 31 cents, they forced the Milwaukeeans to accept the second million from them at the increase price. This caused the first break in the Milwaukee corner. The receipts of oats were so large that the market began to decline. The entire amount of oats cornered by the Milwaukeeans was about 10,000,000 bushels.

TRADE NOTES.

THE H. J. Deal Specialty Co. Bucyrus, O. report business lively for the special lines of goods they carry.

THE firm of Hodge, Howell & Co. of Buffalo, N. Y. has dissolved partnership. The notice sent us does not state whether the business will be continued or not.

THE J. B. Alfree Co. of Indianapolis, Ind. have recently issued a new catalogue of milling machinery and supplies. It is a valuable book of reference for millers to keep handy. The general arrangement of contents and the printing of the book are first-class in every respect. Send for a copy.

THE Vortex Dust Collector Co., of Milwaukee, make a very important announcement to the trade in this number, occupying a full page. It cuts the Gordian Knot supposed to have been tied around the dust collector business in a reasonable, sensible manner, which will be heartily appreciated by millers everywhere. Read it carefully.

THE Westinghouse Machine Co., of Pittsburgh, Pa., report that their business is unusually active for this season of the year. Their sales during the months of May and June were simply phenomenal,

and the outlook for a continuance of such sales is good. The orders received by them for the first twenty days of July, amount to 48 engines, footing up to over 3,000 H. P.

MR. H. W. CALDWELL, 131 and 135 West Washington st., Chicago, Ill., has taken the general agency in the West for the Avery patent Seamless Steel Elevator Buckets, and will carry a full line of sizes in large quantities of the different styles of buckets including the Avery-Caldwell patent Corrugated Bucket, which is pronounced by all users of buckets the finest bucket ever brought out. Western customer should write to Mr. H. W. Caldwell for prices etc.

HOLYOKE, Mass., boasts the largest water power of any of the great manufacturing centers of Massachusetts. Here the whole of the Connecticut river, with its 8,144 square miles of water-shed, is captured and turned into mill powers. The capital used is about \$15,000,000 and 12,000 hands are required to run various mills. The water power developed during the day is about 15,000 H. P. and in the night about 8,000. The visitor cannot but be impressed with the excellent design of the works, built in 1849.

SUPERIOR, WIS.

POINTS IN ITS FAVOR.

SUPERIOR has thirty-eight square miles within her corporate limits, and not a foot of it unavailable for business, dock, or residence property. Superior has eight and a half million bushels elevator capacity, including the plant of the Duluth elevator company, with a capacity of five millions, and the Eastern Minnesota Railways two elevators, the Great Northern and its annex with a capacity of three and a half millions. All of these elevators are of the latest plans, containing every device known to the business to facilitate the handling of grain, and to insure its safety against fire. A little comparison will convey some idea of the capacity of the Great Northern Elevator:

Its working capacity is one million seven hundred and fifty thousand bushels, or one hundred fifteen million five hundred thousand pounds or fifty-seven seven hundred and fifty tons which equal two thousand eight hundred and eighty-seven cars of six hundred bushels each, which would make one hundred and forty-four trains of twenty cars each, which with their locomotives, would make a train over twenty miles in length. It will hold the product of seventy-seven thousand five hundred acres or one hundred and eighteen square miles at an average yield of twenty bushels to the acre.

Superior has the largest coal capacity of any lake port upon the chain of lakes. No single dock anywhere approaches that of the Lehigh Coal and Iron company. It is three hundred feet wide by two thousand two hundred feet in length and is fitted with machinery for handling coal which has given it a reputation among vessel men for promptness, that is enviable.

The Northwestern Fuel Company has also an extensive dock leased from the C. St. P. M. & O. railroad capable of handling half a million tons of coal per annum.

The Pioneer Fuel Company has a large dock upon the property of the Eastern Minnesota Railroad Company, capable of handling a quarter of a million tons a year. This, with the St. Paul & Pacific dock at Connors Point gives a coal handling capacity of at least one and a half million tons.

The saw mills on Connor's Point have a capacity of 60,000,000 feet of lumber per year. Then on the dock on Tower Bay slip is the First Forwarding & Warehouse Company's building which is the forerunner of an immense business of a purely commercial character. Near by

are the Iron works of the Strotham Brothers, and adjoining them the Adamantine Plaster works. The immense flour sheds of the Eastern Minnesota railroad are of interest, occupying nearly 2000 feet in length by one hundred in width. The Standard Oil company is putting in all the facilities for handling their immense business for the whole Northwest.

The West Superior Iron and Steel company is preparing to enter the field in competition with the great Iron works of the east, and when their plant is completed, it will represent an outlay of one and one half million of dollars. This work is being built in the most substantial manner. The West Superior brick works are kept running steadily no matter how the weather is, turning out about 40,000 brick per day. The coke ovens of the Lehigh Coal & Iron Company mark a new era in the fuel question of the Northwest. These are run to their full capacity, and are making a reputation and creating a market for their product which will lead to the erection of a large number of ovens in the near future.

While not yet finished, mention must be made of the mammoth dock of the Eastern Minnesota, which will cover an area of eight hundred feet by two thousand four hundred, with a slip three hundred feet wide through the center. It is in all probability the largest dock in the world, certainly the largest in America, and will, when complete, furnish dock facilities for enough commerce to warrant a city of fifty thousand people alone.

Superior has a union depot used conjointly by the Northern Pacific and the C. St. P. M. & O., the Duluth, South Shore & Atlantic, the St. Paul & Duluth, and the Eastern Minnesota roads.

Three first-class hotels take care of the traveling public, the three representing a value of three hundred thousand dollars, and a fourth which will add fifty thousand more to the capital, is now being built. Of the character of these houses we need only say that the reputation of the Superior hotels is becoming an enviable one.

Superior has four banks representing a capital of over a quarter of a million dollars.

She has a city hall which costs thirty thousand dollars, two school houses costing thirty thousand dollars each: thirteen church edifices mark the moral tone of the community.

A public library of a thousand volumes of carefully selected literature is one of the helps of the young. Superior has a water works plant involving an outlay of a quarter of a million dollars. Two electric light companies—one operating the incandescent system, the other the combined arc and incandescent. The gas company has one mile of mains in, and are putting in seven miles additional as fast as men can do the work. Seven miles of street railroad will be completed before snow flies. One mile of cedar block pavement and fifteen miles of graded, sidewalk and graveled streets will mark this year's street improvements.

A complete system of sewerage planned by one of the first sanitary engineers in the country will be put in as rapidly as it is possible to do the work. Ninety-four passenger trains arrive at and go out from the Union depot every week day. Three years ago there were four. Space forbids the mention of private business and residence buildings of which much might be said, but suffice it here to say that over nine million of dollars are required to cover the cost of improvements in Superior of the past three years. And a careful survey taken to-day shows over a million three hundred thousand dollars of substantial improvements now under way in the city of Superior. These are things we have. What we are to have in the future no man dare predict.—*Evening Journal* July 25. Superior, Wis.



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THE HARRINGTON & KING PERFORATING CO.,

Nos. 224 & 226 North Union St., CHICAGO.



THE EUREKA TURBINE.

The Best Part-Gate Wheel Ever Built.

Absolutely unequalled in efficiency, is shown by the accompanying table from the records of actual tests at the HOLYOKE, MASS., TESTING FLUME.

PERCENTAGE OF EFFICIENCY.

Full Gate.....	3/4 Water.	3/4 Water.	3/4 Water.
24" Wheel.....	.8436	.8416	.8508
24" Wheel.....	.806	.7910	.7700
24" Wheel.....	.8078	.7578	.7275
34" Wheel.....	.8000	.8011	.7814

No other turbine ever approached the above figures at part-gate. We publish our part-gate figures. Others significantly omit them.

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16 SIZES. 5 to 500 H. P.
Not yet equaled by any form of Engine for
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STANDARD 13 Sizes in Stock.
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5000 in use in all parts of the Civilized World.

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Over 300 Sold the First Year.

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Omaha, 1000 Seventeenth St.
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Salt Lake City, 250 S. Main St. Geo. M. Dilley & Sons.
Butte, Mont., 101 Granite St. Machinery Co.
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IMPROVED CORN SHELLER,

IT IS THE
BEST CORN SHELLER
MADE FOR MILL USE.

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Requires Little Power
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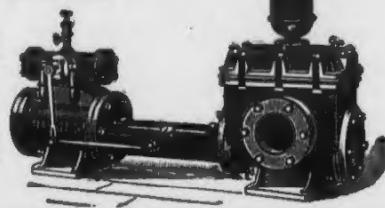
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MANUFACTURERS OF HIGH-GRADE OILS.

Branch Offices and Warehouses in all the Leading Cities.

OUR BALTIMORE LETTER.

[From our own correspondent.]

FOR the benefit of those in the west and northwest who cannot comprehend, it seems, why the Baltimore flour market from time to time does not respond more quickly to the other markets of the country, I will endeavor herewith to explain.

Great competition exists here between the C. A. Gambrill Mfg. Co. and our leading local jobbers for the trade of the city, and whatever either faction does regarding prices, the other is bound to follow suit, irrespective of outside influences.

Heretofore, however, the corporation referred to has generally taken the lead in shaping values, but as it will have to go west for supplies on the new crop, we are in hopes that the reverse will now be in order.

The world at large, we know, cannot understand such a state of affairs existing in this enlightened age, simply because no other city has such a monopoly to contend with, as we Baltimoreans have in this gigantic Octopus. When it is remembered though, that this concern has been in existence for more than a hundred years; that its plant is of the latest and most improved pattern; that its prestige in this community is unparalleled; that its capital is practically unlimited; that its capacity is 2200 barrels daily; that its product is unsurpassed; and that its management is faultless: it can readily be seen how great the odds are against the average dealer.

When a merchant here contemplates buying flour therefore, he must needs consider first of all those offerings only which will enable him to sell at figures a little below those of his great competitor. In a word, he is compelled to look, not so much to the profits, as to his ability to undersell his rival. While spring wheat patents are held at more money here than Gambrill's, they sell only in a limited way at the premium, for consumers invariably return to "Patapsco Superlative," when the prices of the former are excessive. One would suppose, too, that with such a trade and prestige the Gambrill's would exact fancy prices for their product, but, on the contrary, it is their policy to hold them at a point, where it requires constant hustling on the part of dealers to compete with them.

So you see, the trade here, through the whims and caprice of a single firm, is kept in hot water all the time. No matter how violent the fluctuations elsewhere, if the Gambrills change not, neither can the Baltimore market. I hope that I have made myself perfectly clear.

The situation here at this writing is dull and unsettled.

Notwithstanding the decline of 25 cents per barrel recently established, dealers who formerly bought liberally on all such breaks, positively refuse to do so now, for the reason that they yet believe in much lower values.

A perpendicular drop therefore is necessary to bring about much activity. Agents of late, however, have sold moderately of new winter straights to arrive, at prices ranging from \$4.20 to \$4.35, but patents at \$4.70 to \$5.00, and clears at \$4.00 to \$4.25 command no attention whatever.

St. Louis stencils, while very fine in quality this year, are practically out of our market at \$5.00 and \$4.50 respectively for patents and straights.

Some new flour is arriving, but it looks yellow and works soft. Jobbers therefore will be afraid to use it exclusively until it has finally passed through the sweat and become more fully seasoned.

City mills are doing considerable for export both in low grades and Rio brands of extra.

Spring wheat patents are neglected

at quotations ranging from \$5.50 to \$5.75, and while these figures already show a decline of 25 to 40 cents per barrel within the month, dealers still look for a quarter break in them before long.

Spring bakers are also in poor request, but stocks being light, business in them is likely to revive at any moment.

The estimated stock of flour in Baltimore to-day, exclusive of that held by city mills is 43,000 barrels. We quote the range of the market as follows:

Western Winter Wheat Super.	\$2.80@3.15
" " " Extra.	3.25@3.75
" " " Family.	4.0@4.50
Winter Wheat Patent.	4.70@5.00
Spring " straight.	4.80@5.25
" " " Bakers.	5.8@6.30
Baltimore Best Patent.	5.75@6
" " " Choice.	5.8@6.25
" " " High Grade Family.	5.8@6.25
" " " Choice Grade Extra.	5.25@5.75
Maryland, Virginia and Penn's Super.	2.80@3.15
" " " Extra.	3.25@3.75
" " " Family.	4.0@4.50
City Mills Super.	2.50@2.70
" " " Rio Bradas Extra.	4.00@5.00
Rye Flour.	2.75@3.10
Hominy.	2.60@2.75
" " " Grits.	2.75@3
Corn Meal per 100 lbs.	1.10@1.25

The wheat market here has been a great disappointment to most of our merchants, for the reason that the cereal from Maryland, Virginia and Pennsylvania has turned out very badly both in yield and quality.

The apparently worm-eaten clouds which have overhung this territory like a pall for months have done the damage, for hardly a single day has passed without rains, and the consequence is that every thing around here is literally deluged. The condition of southern wheat therefore is unfit for either milling or exporting purposes.

Receipts too have been only half what they were for the same period a year ago.

They are utilized principally by mixers. New western, however, is arriving quite freely, and its condition, while not of the best, is a big improvement over that of the near by.

Local mills will have to seek supplies elsewhere, unless they are satisfied to depreciate the quality of their flour. While shippers report a good demand for abroad, business is restricted by light offerings and a scarcity of available tonnage.

Speculation here favors the bear side, but no matter how low you get the stuff, there are always those in our midst who see no good in it. Prices are about six cents per bushel below those of the same day last year.

CLOSING AND COMPARATIVE PRICES.

Wheat	Closing	Same time
No. 2 Red	To-day.	last year
Spot.	.89@.94	.90@.94
August.	.88@.93	.90@.94
Sept.	.82@.82	.90@.94
Oct.	—@.88	.90@.94
Dec.	.84@.84	—@.94
Steamer 2.	.80@.80	—@.94
Fults.	.80@.87	.88@.98
Longberry.	.88@.87	.90@.94

CLOSING AND COMPARATIVE PRICES.

Corn	Closing	Same time
Mixed.	To-day.	last year
Spot.	.48@.50	.52@.52
August.	.44@.44	.52@.52
Sept.	.42@.44	—@.52
Oct.	—@.48	—@.52
Steamer.	—@.50	—@.52
White.	.44@.48	.60@.61
Yellow.	.44@.45	.56@.57

STOCK OF GRAIN IN ELEVATORS THIS DAY.

CORN.		WHEAT.	
1 White.	872	2 Red winter.	111,270
2	14,892	Steamer 2 red winter.	497
Yellow.	4,173	Special Bin.	288,818
Mixed.	45,878		
Steamer White.	3,248	Total.	469,338
" Mixed.	568	"	1,135,308
Special Bin.	18,862	2 Mixed.	782
Total.	82,998	Special Bin.	20,690
" 1888.	100,004	Total.	80,472
RYE.	8,286		

ITEMS OF INTEREST TO THE TRADE.

W. J. Smith, secretary and treasurer of the Geo. P. Plant Milling Co. of St. Louis, sails from New York on the 17th for Europe, where he will remain two months forming new connections for his firm.

The September celebration in Baltimore promises to be the grandest thing of the kind ever witnessed in the South. Robt. S. Fowler late vice-president of the Baltimore Corn and Flour Exchange has removed to New York.

The Baltimore Journal of Commerce will appear in handsome illuminated colors next month in honor of the celebration.

Geo. H. Plant, vice-president of the Geo. P. Plant Milling Co. of St. Louis,

and 3d vice-president of the Millers National Association, was in Baltimore last week calling upon the trade, with whom he made a favorable impression.

Many of our enterprising flour dealers will have elaborately decorated floats in the forthcoming celebration.

F. W. Lahnsen of the flour firm of Tate, Hinrichs & Co. has just returned from a three months visit to Germany. He looks well and hearty.

The Wm. Lea & Sons Co., proprietors of the Brandywine Mills of Wilmington, Del., are doing a heavy jobbing business here through their Baltimore manager, Charles H. Gibbs.

Louis Sinsheimer one of our largest flour jobbers is expected home from Europe on the 15th.

Conrad Ruhl one of our most successful flour dealers contemplates an early visit to Atlantic City. His son Henry will likely go West for supplies of new flour when he returns.

Many of our leading commission firms have representatives on the road soliciting consignments of wheat and flour.

Henry F. New, of Peter New & Co., wholesale flour dealers, is spending his vacation in travel through New York State.

The patent flour made by the Galaxy Mill Co. of Minneapolis stand very high in this market.

The Mt. Vernon and Monitor Mills of Baltimore are experiencing great difficulty in obtaining wheat of suitable quality for their famous brands of flour.

Andrew J. Palmer of Wilson, Palmer & Co., wholesale grocers and flour dealers of this city is spending the summer at the White Sulphur Springs.

Dealers here who are compelled to pack flour largely in 1/2 sacks have on hand a big accumulation of empty barrels. The fall of the year they say is the best time to dispose of them.

The famous "big four" of Baltimore is composed of E. N. Gardner & Co., Rinehart, Childs & Co., Louis Sinsheimer, and Tate, Hinrichs & Co.

There is a movement on foot to bring the flour inspection of Baltimore under the supervision of the Corn and Flour Exchange. It is meeting with great opposition however.

BALTIMORE, AUG. 13th 1889. ORIOLE.

THE "INVICTA," A NEW GERMAN MIDLINGS PURIFIER.

AMONG the recent important flour-mill machines placed on the European market we note the "Invicta" purifier for middlings and semolina, manufactured by Messrs. Seck Bros., of Darmstadt, Germany.

As may be seen by the sketch, the machine consists in its principal part of a case containing a horizontal silk covered sieve, which is set in motion by a crank shaft, similar to the well-known American system. Through this sieve swinging to and fro, the pile of middlings which it carries travels along the sieve, and on the way the lighter parts (tailings) gain the surface of the pile, while the heavier semolina and middlings drop through the meshes, and are divided according to their size by the different numbers of silk. A powerful ventilator on the top of the machine draws continually a current of air through the machine. The air enters sideways underneath the sieve by a sort of shifting blinds, passes through the meshes of the sieve and then through the pile of middlings, carrying away the light parts on the top of the same.

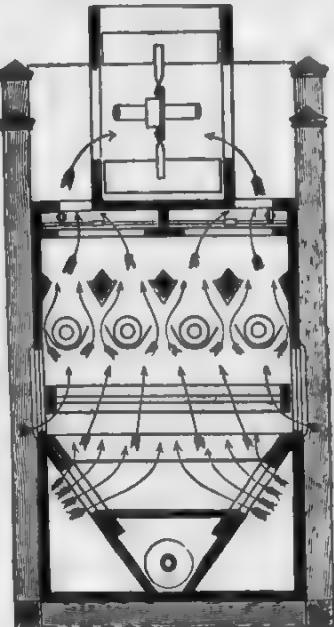
The space above the sieve is divided into four or more chambers, according to the different sizes of the middlings which are to be purified; and as these different sizes are also different in weight, the draught can be easily regulated in each of these chambers separately, so that the heavier middlings are exposed to a stronger ventilation than the lighter ones.

The partitions of these chambers go almost right on to the sieve, so that each chamber is entirely shut up.

Until now very few purifiers produced any intermediate product between the good purified middlings and the stuff in the dust chamber. Others catch up the so-called exhaust tailings by little troughs above the sieve which are fixed to the same.

In order to obtain thoroughly clean middlings or semolina, and at the same time not to lose any valuable stuff, it is absolutely necessary to produce an intermediate product between the good purified semolina and the product which is blown into the dust-room,—the so-called exhaust tailings, which always contain some good material, and which, when re-ground, furnish still some good middlings.

On the other hand, Messrs. Seck Bros. claim that when exhaust tailings were produced, they were caught in little troughs, which were firmly connected with the sieve, and placed at a certain distance from the same. It is evident that tailings of coarse semolina and fine middlings are of quite a different specific weight. Therefore if the collecting troughs are fixed stationary at a certain distance from the sieve, the result is that when purifying coarse semolina the heavier tailings are not lifted up high



THE "INVICTA" PURIFIER.
enough so as to reach the troughs and fall back on the sieve, while when working on fine middlings a quantity of light good material is drawn into the troughs, which are too near in this case.

This is claimed to be entirely avoided by the "Invicta" purifier, as the machine is fitted with a series of small adjustable wire worms in troughs above the sieve, which constitutes the important improvement. Between these worms the air impregnated with impurities passes into the open space above the same, where it expands so as to let drop the impurities into the troughs, from whence they are delivered by the wire worms to the tail end of the machine.

The great advantage of these troughs is that they are entirely independent from the sieve, and can be regulated at any distance within 10 inches from the sieve. By this arrangement the machine can be used with equal success for purifying the finest middlings as well as the coarsest semolina.

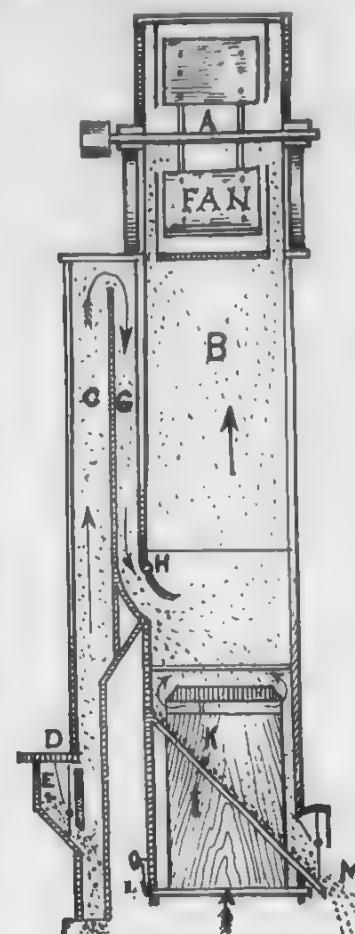
INDIANA-RUBBER pavements have been introduced in Hamburg and Berlin, Germany, and are pronounced a success. The india-rubber pavement is said to combine great elasticity with the hardness of stone, to be completely noiseless, and to suffer neither from cold nor hot weather. Moreover, it is not slippery, like asphalt, and is more durable.

HALF RATE HARVEST EXCURSIONS.
Will leave Chicago and Milwaukee, via the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY for points in Northern Iowa, Minnesota, South and North Dakota, Montana, Colorado, Kansas and Nebraska, on August 6 and 20, September 10 and 24, and October 8, 1889. Tickets good for return passage within 30 days from date of sale.
For further information, circulars showing rates of fare, maps, etc., address A. V. H. CARPENTER, General Passenger Agent, Milwaukee, Wis.

THE BEYNON ASPIRATOR.

This Aspirator makes three separations of the material. It removes all Branny and Fluffy material. It removes the Crease Dirt from the material of the first-break Roll better than any Double Scalper or other machine ever produced. For dusting the break-material as it leaves each Scalper it has no equal, and works to perfection on the different reductions of Germ Stock.

Being upright, it requires very little space, and is the lightest running machine in the market.



The material enters at Hopper D, having an Automatic Valve E to prevent the air entering over the material into Flue C, the clean material discharges at F and the air current carries the lighter material over the Return Flue G and entering the Chamber B, which is provided with a Hopper Bottom, and passes into the Supplementary Flue I, while a draft of air from Flue K carries the lighter material up through the Fan A, while the heavier material discharges through the Automatic Valve M, thus making three separations of the material: one at F, one at M, and one through the Fan A.

The Automatic Valve E distributes the feed evenly its entire width, excluding the air from going over the material into the Flue C, consequently securing a fine draft of air its entire length. Valve H is to regulate the draft in Flue C and G. The bottom of Flue K is provided with a Valve L to regulate draft in Flue I.

The Automatic Valve M excludes air from entering the Supplementary Flue I, and is so sensitive as to discharge the smallest quantity of material.

Give capacity of your Mill, and enquire for prices and particulars.

BEYNON & MURPHY, Watertown, Wis.

— ALSO MANUFACTURERS OF THE —

BEYNON ROLLER MILL ADJUSTER

A most perfect device that may be applied to any of the Rollers now in use.

THE BEYNON ELECTRIC RELIEF AND ALARM

An effective preventive for choking Elevators, Conveyors, Spouts, etc.

Machinery For Sale

ONE PAIR 4-FT. MILLSTONES; new.

SEVEN PAIR 4-FT. MILLSTONES;

used about three months.

ONE PAIR 9 x 18 CHILLED ROLLS;

smooth.

ONE NO. 1 THROOP SMUTTER AND SCOURER.

ONE 24-INCH MIDDINGS MILL.

ONE 1000-LB. PALMER POWER SPRING HAMMER.

ADDRESS

The Filer-Stowell Co.

CREAM CITY IRON WORKS,

Milwaukee, - Wisconsin.

GANZ & CO.

Budapest, Austria-Kunyary.

We are the first introducers of the Chilled Iron Rollers for milling purposes, and hold Letters Patent for the United States of America. For full particulars address as above.

[Mention this paper when you write to us.]

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An experienced land man, native of the South, active and intelligent, wants a position with some reliable Northern firm dealing in Southern timber lands, to locate and select cheap timber lands in the South. References. Address,

SOUTH TIMBER LANDS,
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THE publisher of the UNITED STATES MILLER is desirous of having the names and addresses of Head Millers, Millwrights and Head Engineers in all mills having a capacity of 150 bbls. per day or more.

FOR SALE AND TO RENT.

AN AUTHENTIC BUYERS' GUIDE.

[Short ad. inserted in this column for \$1 per insertion.]

FOR SALE. A full roller process flouring mill, 100 barrels' capacity. Equipped with most approved modern machinery. Built less than one year. Citizens gave a bonus of \$2,500, which I will allow to purchaser of mill. Having an interest in a mill furnishing business, I desire to give it all my time. Full particulars on application. H. C. DUTTON, Fort Austin, Mich.

FOR SALE. A good custom grist mill, with 10 acres of land, located within four miles of the city of Milwaukee. For full particulars write to

HOLTZ BROS. & HELD,
317 Virginia St., Milwaukee, Wis.

FOR RENT. A 2 run, water power, custom flour mill and dwelling house, containing 9 rooms, with 13 acres of land. Everything in good condition. Situated 8 miles north of Kilbourn City, Wis. Easy terms and a bargain. For full particulars address

M. T. WALTON,
142 5th Street, Milwaukee, Wis.

WANTED.

PARTNER WANTED. A sober, industrious man, who understands the flour milling business, and has a capital of three thousand dollars. For particulars apply to

W. J. MILLER & CO., Ballinger, Texas.

WANTED. A position as head miller in a mill from 150 bbls. upwards, by a miller of over 20 years' experience in first-class mills; have been in charge in mills from 200 to 800 bbls. capacity for 12 years; have first-class references; 10 years in one mill. Address MILLER, care of U. S. Miller, Milwaukee, Wis.

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Published once in two years.

Gives nearly 25,000 Addresses, P. O., County and State, Capacity, Power, System, etc.; also lists of Millwrights, Miscellaneous Mills, Millbuilders and Furnishers, Flour and Grain Dealers, Design Flour and Grain Importers, etc., etc.

1883-8 Edition, Issued March, 1888.

PRICE, \$10 PER COPY,
post paid and registered to any part of the world. Address,

E. HARRISON CAWKER, Milwaukee, Wis.

ABOUT ROPE.

With hemp ropes the character and probable strength may be judged in some degree from the appearance. A good hemp rope is hard, but pliant, yellowish or greenish-gray in color, with a certain silvery or pearly luster. A dark or blackish color indicates that the hemp has suffered from fermentation in the process of curing, and brown spots show that the rope was spun while the fibers were damp, and is consequently weak and soft in those places. Sometimes a rope is made with inferior hemp on the inside, covered with yarns of good material, but this fraud can be detected by dissecting a portion of the rope, or, in practiced hands, by its behavior in use. Other inferior ropes are made with short fibers, or with strands of unequal strength or unevenly spun. In the first case the rope appears woolly, from the number of ends of fibers projecting, and in the latter the irregularity of manufacture can be seen by inspection. Occasionally a hemp rope is spun with a core or central strand, such as is used in the interior of many wire ropes. This somewhat increases the strength, but the core, shut in by the outside strands, is liable to rot and infect the rest, and any rope with a musty, mouldy smell should be rejected.

The best hemp comes from Russia, Switzerland, Alsace and Northern Italy, and it is said that the strongest fibers are obtained from plants grown at the foot of high mountains. Ropes to be used on board ships, or where they are liable to be often wet, are usually soaked in tar to preserve them, but the tarring diminishes the strength by about one-third and increases the friction of the rope. The injurious action of tar upon the hemp-fibers seem not to be clearly explained, but it is said to be lessened by subjecting the tar, before applying it to the rope, to repeat melting and washing with water.

MILL AND ELEVATOR BUILDERS, MILL FURNISHERS, MANUFACTURERS OF AND DEALERS IN MILL AND ELEVATOR MACHINERY AND SUPPLIES.

Cards will be inserted under this heading in the "U. S. Miller," not exceeding three lines, copy of paper included, for FIVE DOLLARS per year, cash with order. Additional lines, \$1.00 each, per year.

E. F. AMES & CO., Milwaukee, Wis., builders of complete Flour Mills, manufacturers of Flour Mill Machinery, and dealers in Supplies of every [Mr. 50.]

O. C. RITTER, Sta. A., Springfield, Mo., Patentee and Designer, Ritter's One Reduction Milling System [Aug. 10.]

John C. Higgins & Son, 165 West Kinzie Street, Chicago, Ill., mfrs. of and dressers of Mill Picks. [Mr. 50.]

M. F. YALE & CO., Milwaukee, Wis., Manufacturers' Agents of Engines and Boilers, New York Leather Belting Co.'s Leather Belting, Dodge Wood Pulley.

Robert Peeler & Son Co., Baltimore, Md., manufacturers of Steam Engines, Water Wheels, Flour, Corn, Paper, Saw and Cotton Mill Machinery.

W. J. Clark & Co., Salem, O., manufacturers of "SALEM" Elevator Buckets, etc.

R. C. McCULLY, (P. O. Box 214) Lancaster, Pa., manufacturers Cob Crushers, Cooper's Stoves, Castings, Patterns, etc. [Mr. 50.]

B. H. & J. SANFORD, Phoenix Iron Works, Sheboygan, Wis., manufacturers of the "IMPROVED WALSH DOUBLE TURBINE WATER WHEEL." [Mr. 50.]

John C. Kinner, York Foundry and Engine Works, York, Neb., Mill and Elevator machinery of all kinds, Engines, Rollers, Pulleys, Shafting, etc. [Mr. 50.]

The Gutta Percha and Rubber Mfg. Co., 159-161 Lake St., Chicago Ill., Belting and Rubber Goods. [Mr. 50.]

Richmond Mfg. Co., Lockport, N. Y., manufacturers of Grain Cleaning Machinery, Bran Dusters, etc. [Mr. 50.]

W. Y. Belting and Packing Co., N. Y. Leather Belting Co., W. D. Allen & Co., Agents, 151 Lake Street, Chicago. [Apr. 50.]

W. G. Avery Mfg. Co., 10 Vincent St., Cleveland, O., Specialists: Avery Lever Belt Punches, Avery Seamless Elevator Buckets, Belting, Elevator Bolts, etc. [May 50.]

The M. J. Deal Specialty Co., Bucyrus, Ohio. Headquarters for Flour and Grain Testing Appliances, and Specialties for the Milling, Flour and Grain trades. [May 50.]

A. B. Bowman, 823 Second St., St. Louis, Mo., manufacturers of Wheat Heaters.

Sprague Electric Railway & Motor Co., 16 and 18 Broad St., New York. Electric Motors. Electric Transmission of Power.

Stilwell & Bierce Mfg. Co., Dayton Ohio. Mill Builders, Manufacturers of and dealers in Water Wheels, Feed Water Heaters and Flour Mill Machinery and Supplies.

Milwaukee Bag Co., No. 236 East Water St., Milwaukee, Wis., manufacturers of plain and printed Flour and Grain Sacks of all kinds.

F. R. Ritter, 66 S. Canal St., Chicago. Mill Furnisher. Belting Cloth made to order.

Jes. Leffel & Co., Springfield, Ohio. Water Wheels.

Vacuum Oil Co., Rochester, N. Y. Oils.

The effect on a rope of soaking with water is, however, worse than that of saturating with tar. According to accurate experiments, the tensile strength of a wet rope is only about one-third that of the same rope in a dry condition, and a rope treated with grease or soap is weaker still, apparently through the influence of the lubricant in facilitating the slipping of the fibers. It should never be forgotten that hemp cords contract strongly on being wet, a dry rope 25 feet long shortening to 24 feet or less when dipped in water or exposed to heavy rain.—Bautechnische Zeitung.

HOSTILITY TO NEW THINGS.

A universal law of social progress, with which we are all familiar, is that established systems in thought, morals, manners, government or any department of human activity, struggle to perpetuate themselves by a fight against all innovations. Whatever is new and progressive, or represents the requirements of an enlarging field of life, has got to gain its foothold in the face of the powerful opposition of the old and pre-established. Those more perfect and exact conceptions of nature, which we call scientific ideas, have prevailed only after centuries of moral strife with the inherited superstitions and imperfect generalizations of our semi-civilized forefathers. The progressive and liberal governments of our most advanced nations to-day have been established in spite of the bitter opposition of their predecessors, and are themselves fighting tooth and nail the higher forms that will succeed them. In literature and art old schools strive to deny existence in the new, and even in the little affairs of our daily lives, we are all permitting the things that are, and "have sufficed to our fathers before us," to keep out the better things that might be.—H. G. S. Noble.

A LETTER TO ENGINEERS.

(From Mr. Much Abused Steam.)

WHEN will engineers learn to treat me scientifically? Considering the millions of tons of coal, and tens of thousands of boilers used to generate me all over the world, they ought surely by this time to realize that I am a hot body; that if they wish me to remain a gas and be useful, they should always give me a warm berth. How often are my boiler plates kept uncovered, put into all sorts of damp and cold places, rained and snowed upon. All this only means great and useless waste of fuel and money, for it costs so little to protect my hot walls from the cold.

I do not seem to be much better treated in this century than I was formerly. My great importance became evident in the middle and end of last century, but at that time I was not nearly so well understood, and the ingenious mechanics, who began to call themselves engineers, did not appreciate all my advantages. In fact, they were afraid of me. I was then generated in cast iron boilers, and although compressed to only a few pounds, I often burst out, because they did not know how to keep me well in bounds. Bad and dirty water was used to generate me, and of course I left all the dirt and lime in the boilers, just over their fires.

Matters are nearly as bad now. Some clever folks put all kinds of mixtures into the boilers, all the dirt goes to the bottom, and a lot of heat is wasted blowing off the hot water with the dirt. Why cannot they get rid of all this dirt and lime before they send the water into the boilers? Then, of course, as my very nature is to damp, to wet, and to rust, I am well known to eat iron. But engineers seem to think I can go on for years in a boiler, in a damp place, without doing what I cannot help, namely, to eat away steadily at iron or steel whenever I get a chance. When my old, bad walls get as thin as paper, and there is no shell left, I am grumbled at because I burst out all at once, causing great explosions. Why am I and my boiler plates not looked after better, so as to prevent me from killing people through their carelessness and neglect?

After I leave the boiler, sometimes at low, sometimes at high pressures, I am made to pass through long and narrow pipes, often not covered and very cold, provision being seldom made to let out the water, which I condense against my walls against my will. How can I retain my force as a steam or gas, if I am so badly treated? I shake the pipes to warn them how uncomfortable I am, but with little effect. Some people put nice warm hair felt round my passages, some all sorts of patent coverings, but more often nothing at all. Some give me copper walls, some iron, but mostly rough and uncomfortable.

But this is not all. After being badly and carelessly treated in my infancy in the boiler, and then obliged to force my way through cold, zig-zag passages, with more or less water in them, I am still expected to do useful work in the cylinders, and very hard I try to perform my task. In the old days I was sent into very cold Newcomen cylinders, which were cooled by a jet of cold water to condense me. In such cold cylinders it cost me much of my bulk to heat them up again; but it took the engineers a long time to find this out. Good old Watt understood me better than many others. He carefully thought me over, and gave me a comfortable, warm jacketted cylinder, generally as warm as myself, so that I could maintain my gaseous state fairly well. He also provided me with a separate cold chamber to condense myself in, and resume my watery condition. From this time engineers began to reflect a little about me, and to know me better. In France they made a great fuss over me, and carefully found out how much

heat I possessed at different pressures. In England they ascertained my weight, but it was long before they learnt all my curious properties, and that I can be a solid, a liquid, or a gas, according to my temperature.

About fifty years ago I began to be much used on railways; but here also the engineers gave me very cold cylinders to work in, and little clothing to them and to my boilers, although I had much good and useful work to do. Woolf was very kind; he and others gave me two nice warm cylinders. Now I am promoted to work in three or four cylinders; but even when these are warmed, there are a lot of cold pipes and passages between them. I am compressed more and more, sometimes nearly reaching 200 lb. pressure; and to prevent me from getting out, the iron and steel walls have to be much stronger. The pistons are also made to go much faster now-a-days, because engineers have begun to find out from actual experiments that the quicker they let me through the cylinders and passages the less I turn into water.

much power, viz., in the cylinder, that the walls and passages are a little warmer than myself. Let me hear less of their opinions and more of accurate experiments with me and my condensation in cylinders, &c. This will make me happier, more comfortable, prolong my existence, and save their money.

DETROIT'S GREAT FAIR AND EXPOSITION.



On September 17, a World's Fair and Exposition will open at Detroit, Mich. It is to be a combination of agricultural and industrial fair and exposition, and cash prizes of \$100,000 are to be given. The main building, of which we give an illustration, has a frontage of 500 feet, and the exhibit area is 200,000 square feet. It will be the largest fair building in the world. The great central tower over the main entrance rises to the elevation of 200 ft. The aggregate exhibit surface contained in all the buildings is over fourteen acres. The art building has a frontage of 150 ft., and the four stock buildings are each of them over 300 ft. square.



DETROIT EXPOSITION BUILDING.

Some professors, and fellows of all sorts of societies, make a great fuss over me, taking care to measure or weigh me and take my temperature after I come out of the engine. They think they know how much water I leave on the cylinder walls, how much heat I give to the walls, and how much I take from them to send on to the condenser. Why, of course, if they could only see me, they would know that if the walls are colder than I am, I show it by wetting them, and if I am driven quickly through long passages and cylinders, I have less time to wet them. But in spite of all their theories and talk of Carnot, Marriotte, Joule, Hirn, &c., they have yet much to learn about me.

Another curious thing is, that when I force the pistons up and down, I seem to lose heat, so that there is some connection between the power I give out and the heat I lose, and this is still a puzzle to many people. Some put me on both sides of the piston, some only on one, and some engineers think they measure my pressure and power by a little indicator. Of course I push up the piston after going through cold, zig-zag, small pipes; but I condense a lot of water, and give them trouble. This they do not seem to mind, and still go on making me draw curious diagrams on paper, which are often wrong and too small. Sometimes I get past all their patent pistons and valves, as they do not keep them nearly tight enough.

With their surface condensers I live over and over again, and work hard; I like this constant motion. I am made into steam in the boiler, sent through pipes into two, three, or four cylinders, then into the surface condenser to be again returned into the boilers as hot and clean water to begin life again. The longer I live the more I am appreciated, though I have many opponents—gas, oil, spirit, &c. I do much work on railways all over the world; much on oceans, rivers, and on land, propelling all kinds of machines; and now I am much used to generate electricity. Some make gas of me. If I could only speak, how much I could say of my bad treatment in boilers, pipes, passages, cylinders, &c., by these careless engineers. But I ask them to treat me better in future, to keep my surroundings warmer, and to take particular care where I give them so

The grounds, 70 acres in extent, are beautifully located on the Detroit River, overlooking the Canadian shore, and are only a short distance beyond the city's western line. The grounds are reached by horse, electric and steam cars, while the river also offers a delightful water trip. All exhibits can be unloaded from the cars or steamers directly into the building.

SOME LARGE NEW ENGLAND DAMS.

IN Massachusetts there is a reservoir dam of earth at Arlington, which holds 77,000,000 gallons, and another at Brocton with a capacity of 30,000,000 gallons, the dam being of earth and rubble 1,500 feet long. A dam of earth and masonry 1,100 feet long and 85 feet high has been thrown across Stony creek, near Cambridge and holds in check 6,000,000 gallons. Chicopee has a 150-foot dam resting on a bed of quicksand. Sixty-eight feet above the village of Cochituate there are 16,000,000 gallons suspended behind an earth dam with rubble heart wall. The town of Fitchburg has an earth and rubble dam nearly 75 feet high impounding no less than 200,000,000 gallons, and 200 feet above the village level. Another earth and stone dam stretches across Haynes creek, near Leominster, being 898 feet long and imprisoning 150,000,000 gallons, while another on Morse brook retains 10,000,000 more. Lynn is supplied by dams across streams to hold back 540,000,000 gallons. A dam 600 feet long was built at New Bedford in a swamp, the puddle centre being carried to hardpan, thus forming a storage of 400,000,000 gallons. In 1867 the gatehouse and 100 feet of the dam were carried away by the slipping of quicksand.

The city of Springfield has an impounding reservoir with an area of 445 acres, 350 feet above the level of the streets, and formed by two dams on Broad brook and in a ravine. The Westfield dam stands 771 feet above the town, and forms a reservoir having a capacity of 184,000,000 gallons, the body of water being thirty feet deep and covering thirty acres. An earthen dam with stone heart wall at Winchester is 600 feet long. It stands 121 feet above the town, and impounds 260,000,000 gallons. The city of Wor-

cester knows what dangerous structures storage dams are, for in 1876 the Lynde brook dam gave away and caused a damage of \$750,000, though owing to a warning of twenty-four hours, no lives were lost. Since then a new dam has been built and strengthened with three lines of cast iron pipe laid in the rubble. Its impounding capacity is estimated at 900,000,000 gallons.

At Greenfield there is a stone dam 60 feet long, 35 feet high, 18 feet thick at the bottom and 10 at the top. It is built in a mountainous gorge and stands 5 miles from and 290 feet above the village, and its destruction would release 12,000,000 gallons of imprisoned water, which comes from a mountainous drainage of eight square miles. This dam, bears the same relation to Greenfield that the Canemaugh dam did to the destroyed town of Johnstown, Pa.

Portland, Maine, obtains its water supply from Lake Sebago, and a dam at the source of the Presumpscot river holds the natural overflow in check. Lake Sebago is fourteen miles long and six wide, and has a drainage basin of 500 square miles. At high water the surface of the lake is 267 feet above the city, and, though it fills two reservoirs of 30,000,000 gallons capacity, it is constantly overflowing. To show the danger of this dam at the lake, it should be stated that on June 9, 1882 one of the receiving reservoirs burst, which in thirty minutes discharged 6,000,000 gallons into the streets of the city, causing great damage to property, though there were no lives lost.

MILLING AND MECHANICAL NOTES.

[Condensed and compiled for the UNITED STATES MILLER AND MILLING ENGINEER.]

PULLEYS covered with papermachie are meeting with favor in England.

A LOCOMOTIVE running at a high rate of speed, was struck by lightning recently, while passing through Stamford, Ct. The stroke stunned the engineer and fireman and disabled the engine so that it stopped. This is said to be the first instance of the kind on record.

AN INGENIOUS way of cooling a journal that cannot be stopped is to hang a short endless belt on the shaft next to the box, and let the lower part of it run in cold water. The turning of the shaft carries the belt slowly round, bringing fresh cold water continually in contact with the heated shaft, without spilling or spattering a drop of the water.

IT will be found a good plan to set each set of rolls a few feet apart, so as to give a better opportunity to distribute the product among the machines on the upper floors of the building. When the rolls are set too close together, it obliges the machinery above to be huddled together in the same way, which makes it both awkward and inconvenient. For all mills up to 100 barrels capacity three double sets of rolls are all that will be used and there will be plenty of room to spread them apart. Abernathy.

AN EXPERIENCE machinist says: "a shaft of half the weight, running at twice the speed, will transmit just as much power as one of full weight and slow speed. There is an actual economy of many items resulting from the use of shafting of small diameter running at high speed. There is economy in the purchase of the shafting; second, saving in couplings and hangers which will be lighter; third, pulleys transmitting a higher speed will be smaller, hence lighter; fourth, the belts traveling at high speed will be smaller and lighter; and fifth, the building supporting such light transmission can be lighter and cheaper, and there are many more advantages."

OUR READERS will confer a favor by writing to us giving us any item of news such as new mills, elevators, etc., or improvements in the same, or giving information of a practical nature of general interest to the trade.



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NOTES from the diary of tourists, commercial travelers, business men and others have revealed:

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That the Wisconsin Central touches the most prominent points in Wisconsin, and that it has more important business centers on its through line than any other railway to and from the Northwest;

That the Wisconsin Central has made an enviable reputation with its peerless Dining Car Service;

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S. R. AINSLIE, H. C. BARLOW, General Manager. Gen'l Traffic Manager.

LOUIS ECKSTEIN, Asst. Gen'l Pass. & Tkt. Agt.

MILWAUKEE, WIS.

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Marinette, Green Bay, Depere, Neenah, Menasha, Appleton, Wis.

THE TABLE OF EXPRESS TRAINS.

STATIONS.	DEPART.	ARRIVE.
Champion, Republic,	2:00 A. M.	4:35 A. M.
Iron Mountain, Menominee,	2:00 A. M.	3:25 A. M.
Marinette, Green Bay,	3:10 P. M.	3:55 P. M.
Depere,		
Green Bay, Depere, Appleton, Menasha, Neenah,	2:00 A. M. 7:55 A. M. 3:10 P. M.	3:55 P. M. 10:10 A. M.
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The new steamer City of Racine will be the daily 7:00 P. M. boat out of Milwaukee for Chicago, except Sunday nights. The steamer Chicago will be the Sunday night boat.

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ITEMS FROM BEYOND SEAS.

It is now definitely understood that the Canadian government will not make any alteration in flour duties till the next session of the Dominion Parliament early next year. Canadian millers complain of discrimination in favor of the United States millers who export flour to Canada and against Canadian millers who import wheat from the United States. Sir John MacDonald has promised to place this part of the Canadian tariff on a permanent basis at the next session of parliament.

IN CONCLUDING a report on the Indian wheat trade, Donald Smeaton, Director of Agriculture and Commerce of the Northwestern provinces, says: "I would only repeat, in conclusion, that in my opinion endeavor in India to develop the wheat trade will be comparatively unfruitful, unless backed up by influence in England. It is the London merchants who must give the initial impetus. That impetus once given will be communicated rapidly from the ports to the large country marts, from the marts to the villages, and from the villages to the millions of cultivators who raise the wheat, which, if it only can get a fair chance, will ere long, outstrip its American and Russian rivals, and firmly establish itself in the principal markets of Europe."

A STRIKE AMONG THE ENGLISH MILLERS.—The strike of the milling operators at Middlesbrough and Stockton was induced by a refusal of the masters to fix 54 hours as the weekly limit of work, over which, any work was to be optional and charged as overtime. The demand for a working week of 48 hours only is a growing one, and we must confess to a regret that the mill-owners in the north did not see their way to agreeing to a 54 hours' limit. Work in a mill with modern machinery, requires skilled hands, clear heads, and considerable technical skill. Unremitting attention is also essential, and these qualities, to be found in their perfection, do not admit of more than nine hours strain each day. It is more a mathematical question than a sentimental one; labour, over-strained, will always deteriorate in quality, and will do so in proportion to the overstrain. The masters have their own view of the matter, of course. They recently raised wages 10 per cent., and they think any demand from the operatives ungenerous. More hands for shorter hours, at a slightly reduced payment to each man, would appear to be the wisest solution of the matter.—*Mark Lane Express (London.)*

INSURANCE IN GERMANY.—On this subject *Kuhlow's German Trade Review* says: It may well be doubted whether any previous age has been characterized by such a friendly spirit toward the working classes as distinguishes our own day. The Accidents Preventatives Exhibition, which is now open in Berlin, is one of the many proofs of the interest taken by the other classes of the community in our laboring population. That the Berlin Exhibition is in close relation with our social legislation is shown by the Committee of the Exhibition, which in the explanation of the aim of the Exhibition observes. "While the insurance law is intended to protect the workmen against want during temporary illness, the accidents laws have placed upon the employer the obligation to secure his workmen against the lasting consequences of accidents, which they may meet in their several pursuits, industrial and agricultural." The principal is there laid down, and it has come to be generally recognized, that the employer is responsible for the danger of accidents which is connected with his business. Naturally cer-

tain rights were granted to him in regard to the prevention of accidents, which might contribute to the diminution of this danger. The compulsory national insurance does not preclude the masters from helping themselves, as it leaves to the proper judgment of the masters, combined in societies, the extent to which they may avail themselves of the powers entrusted to them. To these powers belong, in the first place, the establishment of regulations for the existing arrangements with that object. To offer such, as well as to give an impulse to the completion, or improvement, of existing arrangements, is the object of the German Accidents Preventatives Exhibition.

AUSTRIAN MILLING INTERESTS.—A writer in the *Mueller Zeitung* of Vienna, says: The depression from which Austrian milling has suffered for some time past is mainly attributable to the persistent decline in the value of wheat, which has been so prominent a feature in modern market history, and also to the gradual growth of protection among many European nations—the effect of which has been to take away from Austrian millers some of their best foreign customers. A third cause is found in the spread of scientific milling throughout the world, a growth which has had the necessary effect of raising in every civilized country serious competitors for the merchant mills of Austria. Turning to the present condition of the art of milling in Austria, the writer of the article observes that whereas formerly it was the aim of the miller to get as much white flour as possible, it is now his endeavor to finish his work as quickly as possible while producing an equal product throughout. It was to attain this end, it is observed, that Mr. Hagenmacher invented his well-known rotary sieve, and perhaps no better proof of the success of his machine in Austria-Hungary could be given than the list (already a long one) of the many copies of the "Plansichter" which have been launched from one quarter or another. Considerable attention is also being devoted to the question of hulling, and although a perfect decorticator has not yet been found, such progress has been made in this direction as to encourage the hope that in the not distant future a machine will be constructed that will at any rate strip off the outer husks of the wheat, without consuming too much power and without over-severe wear of its working parts.

PERSONAL.

MR. GEO. T. SMITH of the Geo. T. Smith Middlings Purifier Co., Jackson, Mich., called on us recently. He was visiting Milwaukee to inspect the work being done by his company in reconstructing the Jupiter Mills.

MR. HARRINGTON of the Harrington & King Perforating Co., Chicago Ill., spent a day in the city recently and made us a call. The company has a large amount of business here.

WE ARE GRATIFIED to note that our former contributor Mr. Robert Grimshaw, Consulting Engineer, New York, has been appointed by the French Ministry of Commerce and Industry, a member of the Committee on Patronage of the International Congress of Applied Mechanics to be held in Paris in September. He expects to present before that assembly a paper on Improvements in Steam Engines since 1878, and will be pleased to receive from engine builders novelties or improvements that have been brought out during the past ten years.

MR. BEYNON of Beynon & Murphy, Watertown, Wis., called on us lately. He reports that the demand for their machines just placed on the market is very gratifying.

Messrs. Hodge, Howell & Co., of Buffalo, N. Y., recently notified us of the dissolution of the partnership heretofore existing.

THE BEYNON ALARM.

This device is for indicating and relieving the choking of elevators, conveyors, spouts, etc., and may be used in handling either grain or mill material. Referring to the cut, *A* indicate an elevator, *B* relief, *C* valve, *D* electric connection with the valve *C* with bell *E*, *E* electric bell.

When the elevator *A* becomes choked the surplus material discharges at the relief opening *B*. This causes a movement of valve *C*, and makes electric connection with alarm bell *E*. When a choke occurs,



THE BEYNON ALARM.

the bell gives an instant alarm, at the same time the relief relieves the elevator, conveyor or spout of its material.

The electric bell may be attached to the spout, together with the relief, as shown in the cut; or it may be connected to an indicator board and put in any convenient place in the mill. The relief on the spout being connected with board and bell by electricity, causes the bell to ring and the indicator to show the spout choked, while the relief discharges the material from the spout. It may also be used in connection with a clock alarm or other means of indicating. Its use on elevators reduces the liability of fire by burning of the belt, aside from saving annoyance and loss in chokes.

This device is the invention of Mr. John R. Beynon, a practical miller of forty years' experience. It is made by BEYNON & MURPHY, Watertown, Wis., who will give readers any information desired respecting this appliance.

MEETING OF THE ARMY OF THE CUMBERLAND AT CHATTANOOGA.

For meeting of the Army of the Cumberland at Chattanooga, September 18th and 19th rate of one fare for round trip \$9.75, will be made from Cincinnati, tickets sold Sept. 12th to 16th, good for return to Oct. 10th, via the Queen and Crescent Route. This is one of the grandest scenic lines on the continent, passing as it does through the beautiful blue grass region of Kentucky, crossing the famous High Bridge, which spans the Kentucky river at an elevation of 285 feet above the channel, passing through the pretty towns of Lexington, Danville, Nicholasville and the fruit counties of Lincoln and Pulaski. In the mountains at Point Burnside where the line crosses the Cumberland River, the scene is one of picturesque grandeur beyond description. This is the only direct line running entire trains through without change. Three Express Trains daily leave Central Union Depot, Cincinnati.

MEETING OF IOWA MILLERS.

The meeting of the state association of Iowa millers held in Des Moines, July 18, was the largest had for several years, and they started a two-fold movement which will undoubtedly work untold benefits to the milling and farming interests of Iowa. They appointed a committee to co-operate with the manufacturers, jobbers, grain shippers, farmers and other elements, in regard to joint rates, etc. They also decided to inaugurate a movement looking to the encouragement of wheat raising for home consumption in Iowa. Messrs. Taggart, St. John and Smith

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were appointed to draft a resolution stating the opinion of the meeting. They submitted the following, which was unanimously adopted:

Resolved, that the millers' association hereby desires to bring the farmers' attention to the necessity of raising a good quality of winter wheat, also some good quality of hard spring wheat; and to get the matter properly before the farmers we recommend that our president, Mr. Consigny, be requested to write an article for publication throughout the state showing the advantages of raising wheat in Iowa, its success in different localities already being assured.

The general sentiment appeared to be that milling in transit rates were indispensable, and that the revival of wheat raising was very important to both large and small mills.

A DECIDED DISTINCTION.

It is not necessary to recount here the many points of difference between the Stock Exchange and the bucket-shop. We have gone over them many times. The main point, however, is that the bucket-shop keeper stands to gain all that his customer loses. The Exchange broker has no pecuniary interest in the transactions of his customer other than his commission, which in no way is contingent. In the former case, therefore, the operator in stocks is dealing with a man who is bound to take advantage of him if he can, while in the latter case the operator has an agent who is bound as a matter of business policy to protect his interest to the best of his ability. We need go no further in the explanation of the difference between the Stock Exchange and the bucket-shop. The latter performs no useful purpose: the former may not be free from the charge of sometimes working deleterious results, but in the main its operations are both useful and necessary.—*New York Daily Indicator*.

"THE KANKAKEE LINE."

Rates being uniform by all routes, those wishing to travel naturally want to get the best accommodations for their money. To all such we can say, without fear of successful contradiction, that the C. I. St. L. & C. Railway, "Kankakee Line," is, beyond question, the best from Cincinnati and the Southeast to and from Indianapolis, Lafayette and Chicago, and the Northwest. Its track is laid with heavy steel rails, thoroughly ballasted with broken stone and gravel; its bridges are built of steel and iron, resting on solid masonry; its trains are composed of first-class Day Coaches, Elegant Parlor and Reclining Chair Cars and Pullman's Finest Sleepers; its terminal facilities are unsurpassed; its time unequalled. If you wish your money's worth, patronize the KANKAKEE LINE. For further information call on or address, J. C. TUCKER, Gen'l N. W. Pass'r Agent, 121 Randolph St., Chicago. Depots: Foot of Lake, 23d St. and 39th St., Chicago.

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Brass and Bronze Castings. Ingot Metals.

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We make a specialty of furnishing special mixtures to large consumers,
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